DOCUMENT RESUME

ED 415 028 PS 026 143

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TITLE NAEYC Accreditation as a Strategy for Improving Child Care Quality: An Assessment by the National Center for the Early Childhood Work Force. Final Report.
INSTITUTION National Center for the Early Childhood Work Force, Washington, DC.
ISBN ISBN-1-889956-13-9
PUB DATE 1997-00-00
NOTE 103p.
AVAILABLE FROM National Center for the Early Childhood Work Force, 733 15th Street, N.W., Suite 1037, Washington, DC 20005-2112; phone: 202-737-7700; fax: 202-737-0370; e-mail: ncecw@ncecw.org
PUB TYPE Reports - Evaluative (142)
EDRS PRICE EDRS Price MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Accreditation (Institutions); Comparative Analysis; *Day Care; Day Care Centers; Early Childhood Education; Longitudinal Studies; Predictor Variables; Program Evaluation; *Quality Control; Standards
IDENTIFIERS Day Care Quality; National Association Educ of Young Children

ABSTRACT

A large-scale longitudinal assessment was conducted of the National Association for the Education of Young Children (NAEYC) child care center accreditation process. The assessment focused on the extent to which centers seeking NAEYC accreditation improve in quality, the level of quality and staff stability achieved, and support needed. Classroom observations and interviews with directors and teaching staff in 92 child care centers resulted in the following major findings: (1) centers that become NAEYC-accredited demonstrated higher overall quality at the beginning of the accreditation process, and showed greater improvement in quality than centers that were unsuccessful in obtaining accreditation; (2) nearly 40 percent of NAEYC-accredited centers continued to be rated as mediocre in quality; (3) nonprofit status, higher teacher wages, retention of skilled teachers, and NAEYC accreditation were predictors of high quality; (4) all centers had teacher turnover rates approaching or exceeding 50 percent during the study period, and quality of care, not accreditation, was related to retention of skilled teachers; (5) retention of skilled teachers was related to above average wages, working with well-trained teachers, and a climate of low turnover; (6) regardless of accreditation, highly trained teachers who left jobs earned considerably less than colleagues who remained; (7) accreditation was related to receiving intensive support; and (8) high- or moderate-intensity support was associated with quality improvement. (Four appendices detail findings, describe measurement instruments, and compare NAEYC accreditation criteria and the Early Childhood Environment Rating Scale. Contains 41 references.) (KB)

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NAEYC Accreditation as a Strategy for Improving Child Care Quality

An Assessment

Final Report

PS 026143

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NAEYC Accreditation as a Strategy for Improving Child Care Quality

An Assessment by the National Center for the Early Childhood Work Force

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Principal Investigators:

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Laura Sakai

Carollee Howes

National Center for the Early Childhood Work Force
Washington, D.C.

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Printed in the U.S.A. by Harris Lithographics, Inc.

Book design: Cathy Davis

ISBN: 1-889956-13-9

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ACKNOWLEDGMENTS

This research study, and the publication of this report, were made possible by the generous support of the David and Lucile Packard Foundation.

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Special thanks to

- the many teachers and directors who participated in this study, welcomed us into their centers, and gave so generously of their time.
- Bob French, Deanna Gomby, Peggy Haack, Luis Hernández, Nancy Johnson, Deborah Phillips, and Alvonnda Phoenix for providing us with thoughtful suggestions about this report.
- Caroline Cook Carney, Julia Crockett Mannheimer, Kathleen Duppong, Ilene Hertz, and Marcia Meyer for providing us with information about the accreditation support groups in the communities under study.
- Sue Bredekamp and Stacey Knox of the National Association for the Education of Young Children for providing us with information about NAEYC-accredited centers.

The National Center for the Early Childhood Work Force

The National Center for the Early Childhood Work Force (NCECW)—formerly the Child Care Employee Project—is a nonprofit research and education organization committed to improving child care quality by upgrading the compensation, working conditions and training of child care teachers and family child care providers. We advocate for fair and decent employment for caregivers and reliable, affordable, high-quality care for families. Our landmark National Child Care Staffing Study (1990, updated 1993) clearly established the link between the quality of care that young children receive and the level of compensation that child care teachers are paid.

NCECW coordinates two major national efforts to promote leadership and career advancement for teachers and providers: the *Worthy Wage Campaign*, a grassroots coalition working for better-quality care for children and a better livelihood for teachers and providers, and the *Early Childhood Mentoring Alliance*, an information and technical assistance network for mentors and mentoring programs nationwide.

Our organization was founded in 1977 by child care teachers in the San Francisco Bay Area concerned about the low pay and status of their work. We relocated our offices to Washington, D.C., in the summer of 1994.

To become a member of NCECW—or to learn more about the Worthy Wage Campaign, the Early Childhood Mentoring Alliance, or our other publications and activities—please contact:

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HIGHLIGHTS OF MAJOR FINDINGS

This study is the first large-scale longitudinal assessment of the National Association for the Education of Young Children (NAEYC) child care center accreditation process. It addresses questions about the degree to which centers seeking NAEYC accreditation improve in quality, the level of quality and staff stability that different centers achieve, and the types of support that centers need. The study examined centers when they began the accreditation process, tracked them over a period of time, and compared them to other centers in their communities. Classroom observations and interviews with center directors and teaching staff in 92 child care centers in three California communities resulted in the following findings:

NAEYC Accreditation and Quality

- Centers that become NAEYC-accredited demonstrate higher overall classroom quality at the time of embarking on the accreditation process, and show greater improvement in overall quality ratings, staff-child ratios and teacher sensitivity scores, than do centers that seek accreditation but do not achieve it.

- Nearly 40 percent of NAEYC-accredited centers, however, continue to be rated as mediocre in quality, despite the improvements they have made.

- NAEYC-accredited centers are no more likely than non-accredited centers to meet the linguistic needs of children who speak languages other than English.

- Nonprofit status, higher wages paid to teaching staff, and the retention of skilled teachers, in combination with NAEYC accreditation, are predictors of high quality in child care centers.

- Centers beginning but not completing the accreditation process demonstrate no improvement in classroom quality, staff-child ratios, or staff-child interactions.

Sustaining Quality by Retaining Skilled Teaching Staff

- All centers in the sample—including accredited centers—suffered teaching staff turnover rates that approached or exceeded 50 percent during the 20-month period of the study. Accredited centers were just as likely as others to lose highly-skilled staff and to retain low-skilled staff. Quality, however, did affect turnover. Centers—whether accredited or not—that retained a greater percentage of highly-skilled teachers were significantly more likely to receive good or better ratings on overall classroom quality. Teachers who remained on the job earned significantly higher wages.

- Highly-skilled teachers are as likely to leave accredited as non-accredited centers. Skilled teaching staff are more likely to remain at their jobs if they earn higher-than-average wages, work with a higher percentage of well-trained teaching staff, and work in a climate where other well-trained and educated teachers (as well as the director) remain on the job.

- In accredited and non-accredited centers alike, highly-trained teaching staff who left their jobs, and the highly-trained staff hired to replace them, earned considerably less than their colleagues who remained

on the job between Time 1 and Time 2. This finding suggests that without concerted attention to wage improvements, turnover among highly-trained teachers will continue unabated.

- Centers that achieved accreditation experienced less teaching staff turnover during the self-study process (see Glossary) than did other centers participating in self-study that did not become accredited.

What Centers Need to Succeed at Accreditation

- Centers receiving intensive support—including on-site technical assistance from an early childhood professional, custom-designed training for staff and directors, funds to cover release time for staff participating in training, and an ongoing facilitated support group for directors—achieve accreditation at more than twice the rate of centers receiving moderate support or seeking accreditation independently, and at nearly ten times the rate of centers in a limited-support group.

- Centers participating in a high- or moderate-intensity support group were more likely to improve in quality than centers participating in a limited support group or receiving no support. Only participation in a high-intensity support group, however, increased the likelihood of a center achieving a quality rating of good or better.

For a fuller discussion of the findings, see Chapters 5 through 7.

INTRODUCTION

Chapter 1

Recent national studies have consistently rated the overall quality of child care in the United States as mediocre in its ability to meet the developmental needs of young children (Helburn, 1995; Kontos, Howes, Shinn and Galinsky, 1995; Whitebook, Howes and Phillips, 1990). Only one in seven child care centers or family child care homes is rated as high in quality. Although the presence of consistent, sensitive, well-trained and well-compensated caregivers is identified as essential for children to thrive in child care, approximately two-fifths of center-based teaching staff and half of home-based providers leave their jobs each year, largely in response to poor compensation and few opportunities for advancement. Many leave the occupation altogether (Helburn, 1995; Kontos et al., 1995; Whitebook, Phillips and Howes, 1993; Whitebook et al., 1990).

Growing concern about caregiver turnover and other indicators of poor quality has prompted policy makers, philanthropists, and early care and education professionals to identify and encourage a variety of strategies toward child care quality enhancement (Bellm, 1994). Among the most widely promoted and implemented strategies is voluntary accreditation through the National Association for the Education of Young Children (NAEYC), the largest professional organization in the early care and education field (Bredekamp and Glowacki, 1996). NAEYC accredits center-based programs which undergo a quality assessment process (called "self-study") and which meet standards of program operation identified by NAEYC as indicative of good-quality service (National Association for the Education of Young Children, 1991). Accreditation status is conferred for three years, at which time programs are required to undergo a modified self-study process to become re-accredited. (See pages 6 and 7 for a more detailed description of the NAEYC accreditation process).

This study examines the effectiveness of accreditation by the National Association for the Education of Young Children in improving the quality of center-based care and

in maximizing the retention of educated and trained teaching staff.[1] It is the first large-scale study of NAEYC accreditation to track changes in quality among centers seeking accreditation, and to examine differences between centers that achieve accreditation and those that do not. The study examines to what extent program quality and staff stability in newly-accredited centers are influenced by: 1) staff compensation, 2) teaching staff and director backgrounds, 3) director and staff turnover, 4) initial level of quality, and 5) the intensity of support that is available to centers as they seek accreditation. The study also explores whether, and under what conditions, participation in the NAEYC accreditation self-study process contributes to maintaining a skilled teaching staff.

NAEYC ACCREDITATION

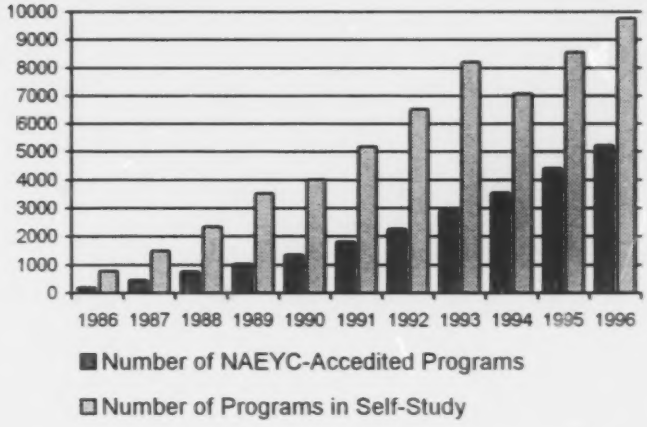
NAEYC accreditation is an increasingly popular vehicle for achieving and verifying quality in center-based early education and care programs (see Figure 1-1). Established a decade ago in response to the lack of national standards for early childhood practice and to promote efforts to improve quality within centers (Galinsky, 1990), NAEYC accreditation now tops the list of strategies to upgrade services. Although approximately five percent of centers nationwide are accredited, many more centers in all fifty states are engaged in self-study, as indicated in Figure 1-2 on p. 4. In recent years, millions of public and private dollars have been targeted toward helping centers achieve NAEYC accreditation.

Accreditation support projects vary greatly in funding level and structure, ranging from limited efforts to assist with accreditation fees to more elaborate projects involving ongoing training, consultation, funds for the purchase of equipment, or other resources (Goldfarb and Flis, 1996; Harris, Morgan and Sprague, 1996; Bjorklund, 1994). These projects have attracted a broad range of supporters, including corporations, foundations, unions, community groups, and federal, state and local governments, which have all committed funds to help programs undertake the self-study and validation processes fundamental to NAEYC accreditation.

Even a partial list of support project funders reveals an impressive array of players. AT&T's Family Care Development Fund has assisted over 300 centers seeking accreditation; Work/Family Directions channels IBM dollars to nearly a dozen cities, where approximately twenty centers in each community participate in a support project; and the American Business Collaborative, a consortium of companies committing funds to improve child care, supports similar projects in a number of communities across the country. In some cases, as in the Hartford (Conn.) Accreditation Project, corporate and foundation dollars have been combined; in others, foundations are supporting projects independently, ranging from the Robert R. McCormick Tribune Foundation's multi-million dollar initiative in Chicago to a smaller effort by the David and Lucile Packard Foundation in northern California. Several union locals in New York City

[1] Many public and private funds have also been directed toward helping family child care homes achieve accreditation, but NAEYC is not the accrediting body for this form of service. NAEYC is one of several organizations that promote accreditation for centers, but it is the most widely known and is most often the focus of accreditation support efforts.

Figure 1-1 Ten Years of NAEYC Accreditation: Number of Programs in Self-Study and Accredited



Numbers reflect accredited programs in November of each year.

Adapted with permission from "The First Decade of NAEYC Accreditation: Growth and Impact on the Field," by S. Bredekamp and S. Glowacki, in *NAEYC Accreditation: A Decade of Learning*, S. Bredekamp and B. A. Willer (Eds.) (1996).

comprise the Consortium for Worker Education, which supports centers seeking accreditation. The Fort Worth, Texas-based private association, Camp Fire, Inc., has also initiated an accreditation support project.

In addition, public funds are increasingly being directed toward accreditation projects. Federal Child Care and Development Block Grant funds in Wisconsin and Virginia, Community Development Block Grant funds in Austin, Texas, and General Services Administration funds in over 100 centers nationwide serving children of federal employees, are being used to help centers become accredited. The Armed Forces have also promoted NAEYC accreditation in accordance with a provision of the Military Child Care Act of 1989, which called for a demonstration project to determine the desirability of mandating accreditation for all military child development centers.

It is understandable why both public and private funders have been interested in promoting NAEYC accreditation. The NAEYC accreditation standards represent a level of quality that surpasses the standard of care in many communities and that exceeds the requirements of licensing in most states (Helburn, 1995; Morgan et al., 1993). It is also reasonable to assume that NAEYC accreditation will be increasingly embraced as a vehicle to supplement the limited quality assurances provided by compliance with state licensing, particularly in the current political climate which often favors voluntary rather than government-mandated efforts to address community problems. Furthermore, the early care and education industry has begun to follow precedents established in health care and higher education, in which government to carry out regulatory and consumer protection responsibilities, and to identify which entities

Figure 1-2 Summary of NAEYC Accredited Programs and Programs Pursuing NAEYC Accreditation

State	Regulated child care centers	Accredited programs	Programs pursuing NAEYC accreditation	State	Regulated child care centers	Accredited programs	Programs pursuing NAEYC accreditation
Alabama	1335	39	91	Montana	251	10	14
Alaska	227	13	19	Nebraska	707	14	46
Arizona	1483	129	341	New Hampshire	405	27	61
Arkansas	1855	30	70	Nevada	790	5	18
California	12773	405	752	New Jersey	3000	114	267
Colorado	2291	135	215	New Mexico	600	39	70
Connecticut	1640	236	396	New York	2689	225	447
Delaware	245	18	44	North Carolina	3551	103	331
Dist. of Columbia	356	34	88	North Dakota	89	11	22
Florida	5742	365	625	Ohio	3713	154	294
Georgia	2119	115	268	Oklahoma	1786	40	64
Hawaii	519	27	55	Oregon	933	27	84
Idaho	462	10	12	Pennsylvania	3281	127	296
Illinois	2725	212	495	Rhode Island	315	11	31
Indiana	552	52	123	South Carolina	1657	50	104
Iowa	1559	99	113	South Dakota	143	4	6
Kansas	1362	46	92	Tennessee	2741	85	146
Kentucky	1888	95	164	Texas	7445	364	713
Louisiana	1826	55	67	Utah	320	13	20
Maine	606	12	30	Vermont	500	29	49
Maryland	2077	58	162	Virginia	2278	168	353
Massachusetts	2169	413	727	Washington	1734	101	211
Michigan	4465	110	195	West Virginia	300	9	14
Minnesota	1487	216	207	Wisconsin	2229	134	291
Mississippi	1546	26	55	Wyoming	223	20	35
Missouri	1435	32	77				

As of November 1996, the total number of accredited programs in the U.S. was 4,995; the total number of programs in self-study was 9,630. As of February 1997, the total number of regulated center-based programs in the U.S. was 96,507.

Information adapted with permission from *1997 Child Care Center Licensing Study*, by The Children's Foundation, National Child Care Advocacy Program, Washington, DC, and "The First Decade of NAEYC Accreditation: Growth and Impact on the Field," by S. Bredekamp and S. Glowacki, in *NAEYC Accreditation: A Decade of Learning*, S. Bredekamp and B. A. Willer (Eds.) (1996).

are eligible to receive public funding (Havighurst, 1994). To cover the costs of child care for the children of low-income families, seven states now provide higher reimbursement rates to accredited centers.

As the number of NAEYC-accredited centers increases, consumer awareness of and reliance on NAEYC accreditation as an indicator of center quality have also grown. When choosing a program for their children,

more and more parents are asking about NAEYC accreditation status, thus rendering it an important marketing device, particularly in communities where centers compete for business (Bredekamp and Glowacki, 1996). As a result, a number of large national child care chains now encourage their centers to seek NAEYC accreditation.

As NAEYC accreditation enters its second decade, it is poised to assume even greater influence in the early care and education community. But despite considerable investments in accreditation by many sectors, and widespread reliance upon accreditation status as a standard of excellence, concerns have been raised by consumers and practitioners alike about whether NAEYC-accredited centers truly reflect high quality, and whether these centers can sustain high quality without greater attention to staff retention. Yet to date, there has been little research to independently measure the level of quality that NAEYC-accredited programs achieve and maintain. The present study has been designed to address these questions.

An Overview of the NAEYC Accreditation Process

The accreditation process involves three steps. The first, called **self-study**, begins when a center pays an application fee to NAEYC's National Academy of Early Childhood Programs and receives the materials needed by center personnel and parents to assess how well it meets the Academy's Criteria for High-Quality Early Childhood Programs. Self-study provides an opportunity to conduct an in-depth evaluation of the program's strengths and weaknesses, and to develop a plan to make needed improvements. There is no time limit set on the self-study process. Once center personnel are satisfied that their program complies with the Criteria, a Program Description form is submitted to the Academy, and the self-study phase of the process is complete. Typically, programs which move on to the next phase do so within two years.

The second step, called **validation**, involves a site visit from a trained validator who verifies the accuracy of the Program Description submitted to the Academy as an actual reflection of daily program operations. Validators are early childhood professionals who have had experience in working with children directly in a group setting and in administering a program; have completed a college degree in early childhood education, child development, or an equivalent field; and demonstrate objectivity and good communication skills. Validators perfrom this service on a volunteer basis. Programs serving sixty or fewer children are visited by dne validator for one day, and larger programs are visited by two validators for up to three days. Validators meet with the program administrator to discuss the observation before it is submitted to the Academy, and the program makes an additional payment to the Academy for the validation visit.

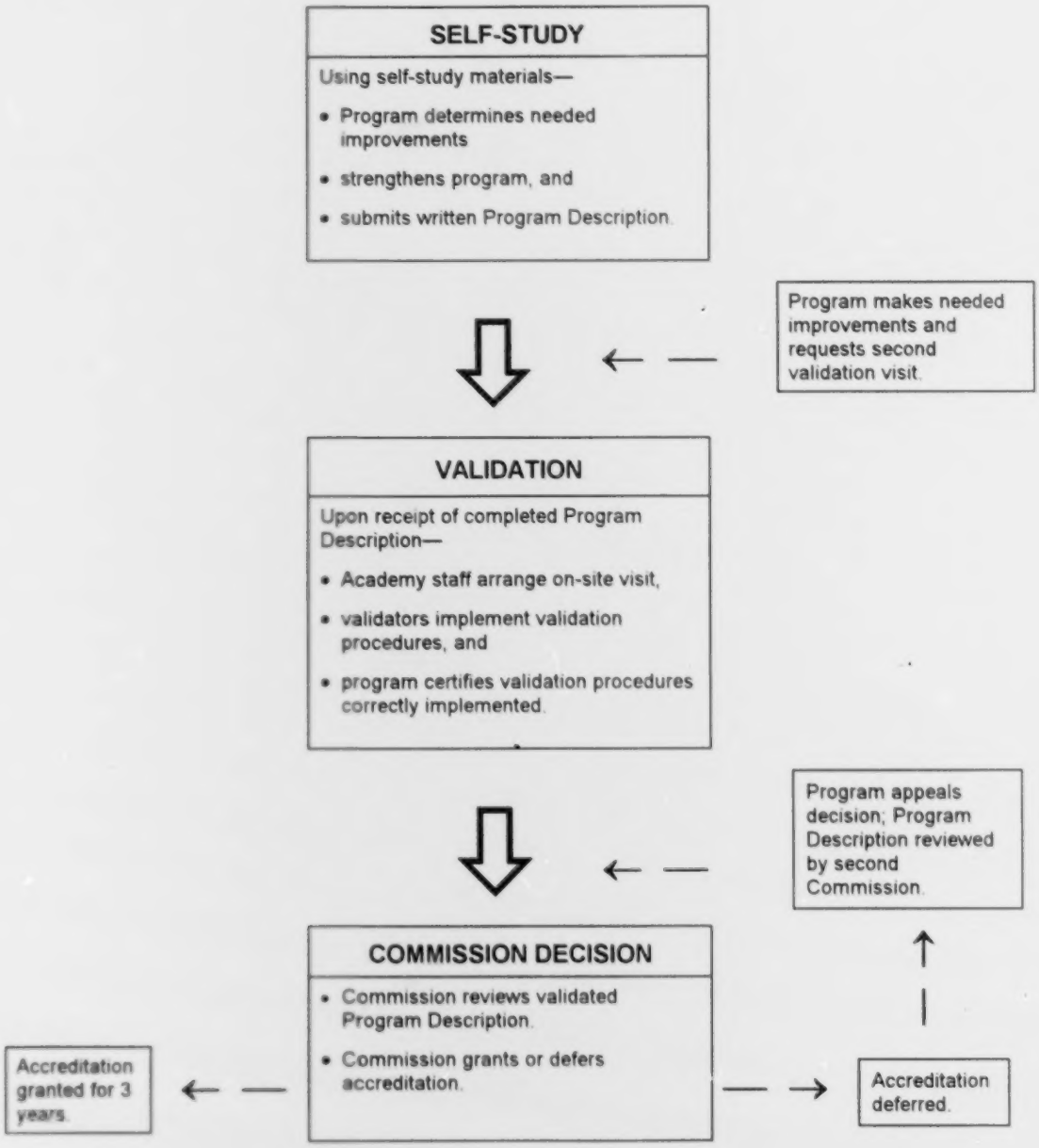
The third step involves the **accreditation decision** made by a three-person commission comprised of early childhood professionals such as program administrators, teacher educators and/or researchers. Each commission makes decisions about fifteen to twenty programs, taking into consideration each program's unique characteristics and its validated Program Description. One hundred-percent compliance with the Criteria is *not* necessary in order to achieve accreditation. The Commission either grants accreditation for three years, or defers accreditation and recommends additional improvements. Programs may either appeal the decision, or make recommended changes and undergo another validation visit. A program may undergo up to four validation visits, paying fees for each.

During their three years of accreditation status, programs are required to submit an annual report based on Criteria related to needs assessment, goal setting and periodic evaluation. Programs inform the Academy of any improvements they have made, and any changes in personnel or other aspects of the program, such as the facility. Prior to expiration, centers must undergo another self-study, prepare a new Program Description, and receive another validation visit.

Application and validation visit fees are based on the number of children enrolled in the program. Application fees range from $100 to $250, and validation fees range from a minimum of $350, for a center serving 60 or fewer children, to $850 for centers serving 241 to 360 children. For each additional 120 children beyond 360, the validation fee increases by $50.

Source: NAEYC (1991). *Accreditation Criteria and Procedures of the National Academy of Early Childhood Programs.*

Figure 1-3 Overview Of the NAEYC Accreditation Process


SELF-STUDY
Using self-study materials—
• Program determines needed improvements
• strengthens program, and
• submits written Program Description.
Program makes needed improvements and requests second validation visit.
VALIDATION
Upon receipt of completed Program Description—
• Academy staff arrange on-site visit,
• validators implement validation procedures, and
• program certifies validation procedures correctly implemented.
Program appeals decision; Program Description reviewed by second Commission.
COMMISSION DECISION
• Commission reviews validated Program Description.
• Commission grants or defers accreditation.
Accreditation granted for 3 years.
Accreditation deferred.

Source: NAEYC (1991). *Accreditation Criteria & Procedures of the National Academy of Early Childhood Programs.*

PURPOSE AND GOALS

Chapter 2

Summary: This chapter describes the major research questions addressed in the present study, and reviews previous research related to NAEYC accreditation and quality

This study was designed to assess NAEYC accreditation as a strategy for improving center-based child care quality in the United States. Specifically, it explores whether providing support to centers seeking to become accredited is a sound investment of public and private quality enhancement resources. As elaborated below, the study has three major goals.

Goal One

To examine the extent to which centers seeking and achieving NAEYC accreditation improve in quality, and to assess the level of quality achieved by NAEYC-accredited centers.

This study differs from previous research on NAEYC accreditation by providing baseline information about the level of quality found in centers prior to their participation in self-study. Many practitioners, policy makers, parents and funders assume that the process of participating in self-study, in and of itself, will result in quality improvements, whether or not accreditation is achieved (Goldfarb and Flis, 1996; Harris, Morgan and Sprague, 1996; Bjorklund, 1994). Conversely, others in the early care and education community describe self-study as a time-consuming process that can have demoralizing consequences for teachers and directors when accreditation is not achieved. A major focus of this study is to assess whether participation in self-study does indeed result in quality improvements, whether or not accreditation is achieved.

While helping centers to improve in quality is a stated goal of NAEYC accreditation, accreditation status is intended to signify that a center provides developmentally appropriate caregiving and operates a high-quality program as defined by the National Academy of Early Childhood Programs, the department of NAEYC responsible for accreditation. Thus, the goal of NAEYC accreditation is not simply center improvement, but rather achievement of a standard of good care.

A number of studies provide useful comparisons among programs seeking accreditation, as well as information about how participants view the accreditation process. They offer little empirical evidence,

however, about the quality of accredited programs (Bredekamp, 1986; Bredekamp and Apple, 1986; Mulrooney, 1990; Herr, Johnson and Zimmerman, 1993; Zellman, Johansen and Van Winkle, 1994). While systematic program observations are available from the two most recent large-scale examinations of U.S. child care, the *National Child Care Staffing Study* and the *Cost, Quality and Child Outcomes in Child Care Centers Study* (Whitebook et al., 1990; Helburn, 1995), neither study contained more than a small percentage of accredited programs. These studies provide some evidence of better quality among accredited as compared to non-accredited programs. They also raise questions about whether all accredited programs achieve a high level of quality and staff stability.

Findings from the *National Child Care Staffing Study*, in which fourteen of the 227 centers studied (6.5%) were NAEYC-accredited, suggest that accredited centers provide higher-than-average-quality services to children. Overall quality as measured by the Early Childhood Environment Rating Scale (Harms and Clifford, 1980) was higher in accredited than in non-accredited centers. Accredited centers provided a more developmentally appropriate environment and employed teaching staff who interacted more sensitively and less harshly with children than the average staff in the study. Accredited centers also had better-compensated teachers with more formal education and specialized early childhood training, provided better benefits and working conditions, and reported lower rates of staff turnover.

Findings from the more recent study, *Cost, Quality and Child Outcomes in Child Care Centers*, confirmed the higher-than-average quality of NAEYC-accredited centers, but raised questions about the level of quality and staff instability in many of these centers. Thirty-one (7.7%) out of 401 centers in the study were NAEYC-accredited at the time of the study or became accredited within the next year. These centers were compared to other types of programs providing higher-than-average quality in the study: publicly-operated centers, work site centers, and publicly-funded centers tied to higher standards. The accredited centers were also compared to the other centers not in the high-quality group.

As a group, NAEYC-accredited centers were not found in the study to provide the best care in their communities, and on average, fell slightly short of a good overall quality rating. Two accredited programs were rated as barely mediocre, and only one accredited program in the study was rated as excellent. More specifically, average staff-child ratios among accredited centers were not as good as those in the group comprised of work site and publicly-operated centers, which received greater subsidies and more in-kind donations.

Accredited centers in the study, however, received a higher overall center quality score than other centers not in the high-quality group. They also employed more teachers with at least a college degree and with specialized early childhood training, paid somewhat higher wages for teachers, assistants and teacher-directors, and were more likely to offer health insurance and paid maternity leave to teachers. On two key indicators of quality, however—staff-child ratios and staff tenure—there were no significant differences reported between accredited centers and non-accredited centers that were not in the high-quality group.

Taken together with the *National Child Care Staffing Study*, the findings from the

Cost, Quality and Child Outcomes in Child Care Centers study suggest that NAEYC accreditation status indicates moderate to good care, rather than a firm criterion of excellence. The present study provides an opportunity to assess a larger group of accredited centers in terms of the improvements made during the self-study phase and the level of quality achieved. It also permits comparison along these dimensions between accredited centers and similar, non-accredited centers in their communities.

Goal Two

To compare initial levels of quality, and types of assistance provided, among centers that do and do not achieve NAEYC accreditation.

Limited information exists about the numerous support projects established to encourage and assist centers seeking accreditation. Research thus far provides minimal data about which forms of support centers find most useful, and whether these are the same supports that lead to the improvement and maintenance of program quality (Bloom, 1996a and 1996b; Goldfarb and Flis, 1996; Harris et al., 1996). Self-reports from centers participating in support projects, as well as from project coordinators, provide some evidence that more intensive supports result in greater improvements in quality and higher rates of accreditation (Goldfarb and Flis, 1996; Harris et al., 1996). Still, little is known about the interplay between a center's initial level of quality and the efficacy of different types of support.

This study is designed to answer basic questions about accreditation support and to provide information that can guide those designing and funding such projects. Specifically, does the level of support a center receives influence its ability to achieve accreditation and/or improve in quality? Are centers that participate in intensive support groups more likely to achieve accreditation than those in less comprehensive groups or those that seek accreditation on their own? Do different levels of support result in greater or lesser improvements in quality? Do centers with higher initial levels of quality require less support to succeed at accreditation? Finally, does the intensity of support influence teacher stability in any way?

Goal Three

To determine the extent to which NAEYC accreditation contributes to building a skilled and stable early care and education work force.

Skilled and consistent teaching staff are essential to the ongoing quality of services (Helburn, 1995; Whitebook et al., 1990). Because so many resources used to improve center-based care are directed toward centers seeking NAEYC accreditation, it is important to evaluate whether centers participating in the self-study process and/or achieving accreditation succeed at retaining well-trained and effective teaching staff, and whether an investment in accreditation is likely to be sustained. Compared to other quality indicators, there is minimal emphasis in the self-study process on staff stability or compensation (National Association for the Education of Young Children, 1991), and the previous research about turnover and accreditation status is equivocal.

Evidence from the *National Child Care Staffing Study* (Whitebook et al., 1990; 1993) suggests that accredited centers had lower staff turnover than non-accredited centers. In 1992, four years after the initial observations of centers, programs were surveyed by phone to determine changes in staff and current wage levels. Programs whose accreditation status was still current had lower four-year turnover and paid higher wages than non-accredited centers. Centers whose accreditation had expired, however, looked no different in terms of turnover and wages than those centers that were not accredited. Bloom (1996b) suggests that the accreditation process involves staff in an effort to improve the organizational climate, and reports lower turnover rates in a self-selected sample of centers. The *Cost, Quality and Child Outcomes in Child Care Centers* study, however, found that staff tenure in accredited centers was not significantly better than the average for centers in the study, and averaged almost a year less in accredited centers when compared with the high-quality programs in the study (Helburn, 1995). Greater staff instability may have resulted from differences in compensation packages between the accredited and other quality programs. The average hourly wage for teachers in accredited programs ranged from $0.83 to $3.14 less than the wage in the identified high-quality group. On a full-time basis, these wage differences translate into several thousand dollars per year.

Such findings about staff instability in accredited centers, in light of other findings about the relationship between wages, turnover and child care quality, raise troubling questions about the sustainability of quality resulting from investments in accreditation. Job turnover—calculated by determining the percentage of staff who cease their employment within a twelve-month or other specified period—discourages the development and maintenance of consistent relationships between children and their caregivers. The rate of turnover among teaching staff influences the quality of care that programs provide and affects children's social-emotional and language development. In the three most recent large-scale studies of child care, higher turnover rates among staff were linked to lower-quality services (Helburn, 1995; Kontos et al., 1995; Whitebook et al., 1990). Specifically, in the *National Child Care Staffing Study* (Whitebook et al., 1990), centers with higher turnover were characterized by classrooms with less developmentally appropriate environments and activities, and teaching staff in these programs interacted less sensitively and appropriately with children. Helburn and her colleagues (1995) also demonstrated a link between turnover and quality in the *Cost, Quality and Child Outcomes in Child Care Centers* study. Centers with staff turnover rates of ten percent or less per year were rated significantly higher in a combined measure of quality that included structural features (e.g., staff-child ratios, group size, and staff characteristics) and process variables (e.g., interactions between adults and children) than those centers with higher turnover. Likewise, in a study of family and relative care, Kontos and colleagues (1995) found that home-based providers who continued to offer care a year after the initial observation were initially rated as higher in global quality.

Low wages have been identified as a major reason for high turnover and the mediocre quality of most child care services in the U.S. (Phillips, Mekos, Scarr, McCartney and Abbott-Shim, 1996; Helburn, 1995; Whitebook et al., 1990). The most rapid turnover has occurred among the least

qualified staff, who typically earn the lowest wages and have received minimal or no college-level education or specialized early childhood training (Helburn, 1995; Whitebook et al., 1990). There is some indication, however, that new opportunities in elementary education, fueled by the recent increase in the birth rate and school reforms such as class-size reduction, are drawing teachers with college degrees in early childhood education away from child care jobs (Whitebook, Burton, Montgomery, Hikido and Chambers, 1996). Thus, the challenge facing the child care industry involves both minimizing overall turnover and maximizing the stability among more skilled members of the work force.

The release of the *National Child Care Staffing Study*, which first drew attention to the relationship between wages, turnover and child care quality, generated vigorous debate about the relative contribution of wages to maintaining a skilled and stable work force. Although subsequent research (Phillips et al., 1996; Helburn, 1995) has replicated these earlier findings, challenges to the saliency of wages as a predictor of turnover and quality continue (Katz, 1994). Some believe that financing for higher wages is simply unattainable. Others believe that wages and turnover can only be addressed by increasing the professional development of child care teaching staff, and vigorously promote the attainment of higher levels of education and specialized training with relatively little regard for direct efforts to raise wages, even in the face of alarming rates of departure from the field by highly-trained teachers (Morgan et al., 1993). Still others, particularly center directors, put forward other factors as primary causes of turnover, such as leaving one's job to get married, to start or expand their families, or because of tension with other staff. Many in this group believe that while wages may be a critical component of the turnover problem, other personal and work environment factors play a major role in teachers' decisions to stay in or leave their jobs (Bloom, 1996a).

In this study, we seek to clarify the role of wages by contrasting it with other variables that have been associated with turnover. Thus, in addition to exploring the relationship between participation in NAEYC accreditation and the maintenance of skilled teaching staff, this study examines whether work place and individual characteristics differentiate high- and low-skilled teaching staff who stay or leave their jobs over time, and identifies center characteristics that predict greater retention of high-skilled teaching staff.

This study differs from previous assessments of accreditation and turnover by examining centers at more than one point in time. Ideally, however, an additional assessment of the centers in our sample would further deepen our understanding of turnover and the relationship between achieving and sustaining quality in relation to NAEYC accreditation. Our current goal is to revisit these centers in three years, at which time the accredited centers in the sample seeking re-accreditation will be required to undergo another assessment by NAEYC.

STUDY DESIGN

Chapter 3

Summary: This chapter provides detailed information about sample selection, procedures for collecting and analyzing data, and descriptions of key variables used in the analyses.

OVERVIEW

The present study examined the quality of services offered by 92 child care centers in three California communities between January 1994 and June 1996. Our sample included three groups of centers:

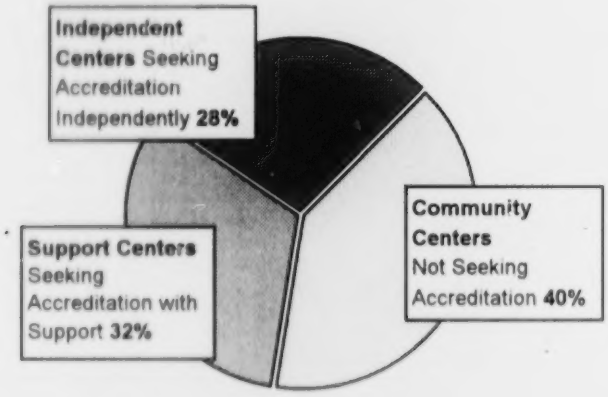
- **Support centers**: namely, those seeking NAEYC accreditation with support from local agencies described below.
- **Independent centers**: those seeking NAEYC accreditation independently, without participating in a support group.
- **Community centers**: those providing services in the same target community but not seeking NAEYC accreditation.

Classroom observations and interviews with center directors and teaching staff provided information about center characteristics and program quality, as well as staff qualifications, continuity and compensation. Data were collected during two observation periods for each center in the study. The first observations occurred during the first half of 1994, soon after those centers seeking accreditation had initiated the self-study process. The second observations occurred shortly after a center achieved accreditation, or for those participating in self-study but choosing not to advance to validation and those not seeking accreditation, within 24 months of the first observation. The average time between visits for all centers participating in the study was 1.8 years.

THE SAMPLE

The purpose of the study guided our selection of centers. Specifically, we sought centers which were embarking on the accreditation process with varying levels of support, and which could therefore be compared to one another as well as to similar centers not engaged in the process. We also sought centers serving varied economic groups, as determined by per capita income for the zip code area in which they were located. We focused on centers that served

Figure 3-1 Description of Sample


Independent Centers Seeking Accreditation Independently 28%
Community Centers Not Seeking Accreditation 40%
Support Centers Seeking Accreditation with Support 32%

preschool-age children, defined in this study as those aged at least two and one-half years but not yet in kindergarten. Centers serving only infants and toddlers or school-age children were excluded because they were too few in number to permit comparisons.

In early 1994, local agencies in three northern California communities—Palo Alto, San Jose and Santa Cruz—initiated support groups to assist child care centers in the NAEYC accreditation self-study process, and we selected these sites as the target communities for the study. These communities share certain features, including a mix of high-, middle- and low-income neighborhoods, and a variety of center-based child care centers operating on a for-profit or nonprofit basis.

The accreditation support projects in the target communities varied sufficiently in scope and intensity to permit comparisons among them. Detailed descriptions of the three support projects were compiled from interviews with the project coordinators. The high-intensity group assigned a full-time staff person to provide technical assistance to centers seeking accreditation; directors engaged in monthly meetings; staff attended a series of training sessions designed to assist them in the self-study process; and the project covered the costs of staff release time to attend such training. The moderate-intensity group offered a few training sessions and held periodic meetings for directors; a part-time staff person was available to centers seeking assistance with the accreditation process; and limited funds for new equipment, but none for training, were available to participants. The limited-intensity group held several meetings for directors only, and provided some funds for equipment.

Selection of Centers

Letters describing this study and its expectations of participants were sent to all recruited centers. Potential participants were not informed of the purpose of the study, which was presented as an examination of quality rather than a specific assessment of the NAEYC accreditation process. Shortly after mailing the letters, we contacted the center directors to ask whether they were willing to participate. Replacement sampling was used to handle refusals (see Table 3-1). At Time 2, we called each of the centers that participated in the study at Time 1, and asked whether they would be willing to participate in a second round of interviews and observations. Ninety-two of the original 102 centers participating at Time 1 agreed to participate at Time 2.

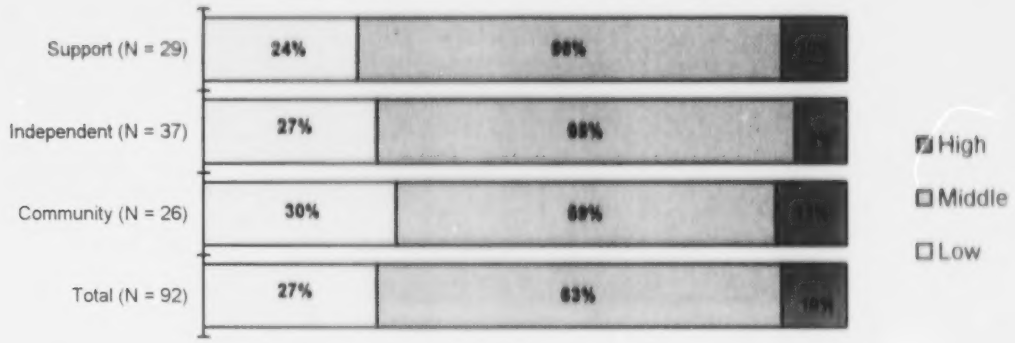
All centers participating in the support projects were asked to participate in the study if they served preschool-age children, and all agreed (see Table 3-1). The support centers participating in both phases of the study were comprised of 29 programs. The majority of the support centers (83%) operated on a nonprofit basis, and most operated in low- or middle-income neighborhoods (see Figure 3-2).

The independent centers were selected randomly from a master list of all centers in the San Francisco Bay Area undergoing the self-study process, made available to us by NAEYC. Twenty-six centers from this list participated in both phases of the study (see Table 3-1). Because a relatively small number of centers in any of the target communities were undertaking the accreditation process without participating in a support group, several of the centers in this category were selected from neighboring communities with similar demographics. The NAEYC list did not provide information about center auspices (i.e., for-profit or nonprofit) or community income level, and thus these criteria could not be used to guide selection. The centers in the independent group which agreed to participate, however, were similar to the support centers: the majority (85%) operated on a nonprofit basis, and were located in middle- or low-income areas (see Figure 3-2).

Table 3-1 Center Participation and Refusals at Time 1 and Time 2

Group	Recruited N	Acceptance Rate	Time 1 Observed N	Time 2 Closed N	Time 2 Refused N	Time 2 Observed N
Support	33	100%	33	2	2	29
Independent	66	42%	28	2	0	26
Community	106	39%	41	2	2	37
Total	205	50%	102	6	4	92

Figure 3-2 Percentage of Low-, Middle-, and High-Income Areas Represented in Sample



To select the community centers, we obtained a list of centers in the three target communities from the local child care resource and referral agencies, which maintain current records on all licensed child care programs in their service areas. First, we cross-referenced the resource and referral and NAEYC lists to generate a pool of centers serving the target area and not involved in the self-study process. Next, we matched the eligible pool of centers to support centers according to zip code and auspices. We then used a stratified random sampling strategy to identify a list of centers to recruit.

Thirty-seven centers comprised the community sub-sample for both phases of the study (see Table 3-1). Slightly more community centers than support centers were included in the sample to allow for anticipated greater attrition among these centers not involved in a quality improvement effort or support group. As indicated in Figure 3-2, most of the community centers were located in middle-income areas. Although a majority (59%) of the community centers operated on a nonprofit basis, a greater number of for-profit centers were included in this sub-sample than in the support or independent groups.

Attrition Analysis

The ten centers participating at Time 1 that were closed ($n = 6$) or refused to participate ($n = 4$) at Time 2 did not differ from those that participated at Time 1 and Time 2 with respect to auspices, income area or hours of operation. However, these centers served fewer children and differed from the final sample of centers along several dimensions associated with quality. They paid lower wages to directors and to observed teaching staff, and reported higher levels of total staff turnover (see Appendix A, Table 1).

Selection of Classrooms and Participants

Two classrooms in each center were randomly selected for observations and interviews at Time 1. In centers that did not include two preschool classrooms because of center size and/or age distribution of the children, only one classroom was observed. One hundred forty-eight classrooms were observed at Time 1. Two classrooms were observed in 56 centers, and single observations occurred in 36 centers. At Time 2, the same classrooms were observed, with one exception. Two classrooms were observed in 55 centers, and single classroom observations occurred at 37 centers.

■ Center directors

We interviewed the director in each center at Time 1 and Time 2 to ensure that a person with an overview of center operations and access to center records could provide details about finances, salaries, turnover and related information. We also sought to tap the opinions of the person in each center responsible for initiating and implementing the accreditation self-study process, which, according to NAEYC accreditation guidelines, must be the director. We also wanted to explore the background of the person with program oversight, given the emerging relationship between center quality and director performance (Bloom, 1996b; Helburn, 1995).

Directors' job definitions varied, depending on the size and structure of each center. In some cases, directors or assistant directors worked in the classroom along with performing administrative functions; in others, the director's role involved minimal classroom contact and focused primarily on administrative tasks. In large programs that employed a staff person specifically responsible for financial record keeping, that person was interviewed in addition to the director about salaries, other center expenditures, and sources and amounts of income.

■ Teaching staff

In addition to learning about all teaching staff from director interviews, we observed and interviewed two teaching staff in each selected classroom. We chose to observe and interview the head or lead teachers in each classroom, because such staff typically set the tone and style for classroom activities and interactions. If a classroom had co-teachers, the teacher who assumed leadership during the visit was selected for the observation, and both teachers were interviewed. If the classroom had an assistant teacher, she/he was selected to participate in the interview in order to capture perspectives on center processes based on differing roles. We used random sampling to select assistants or teachers if more than one non-lead teacher or assistant teacher worked in the same classroom. Teachers and assistants who participated during Time 1 were interviewed and/or observed at Time 2 if they were still employed in the center and working in the same classroom.

Every staff member who was asked to participate agreed to do so. Two hundred and sixty-six teaching staff members were interviewed at Time 1: 68 percent were teachers, 23 percent were assistants, and 9 percent were teacher-directors. At Time 2, two hundred and sixty teachers were interviewed: 70 percent were teachers, 18 percent were assistants, and 12 percent were teacher-directors.

■ Support group coordinators

Coordinators of the three NAEYC accreditation support groups provided detailed descriptions of their projects at the beginning of the study. We also contacted the coordinators between Time 1 and Time 2 to learn whether any centers in their group had scheduled a validation visit, the assessment used to determine accreditation status. Two of the support groups ceased operation by the beginning of 1996; the remaining group continues, as of this writing, in a modified form.

MEASURES

Measures included interview protocols for directors, teaching staff and support group coordinators adapted or developed for the study (see Appendix B), as well as two observational instruments—the Early Childhood Environment Rating Scale (Harms and Clifford, 1980) and the Arnett Scale of Adult Involvement (Arnett, 1989)—routinely used to observe and assess child care center quality and teacher-child interaction.

Interviews

The support group coordinator interview was designed for this study. The director and teaching staff interviews were adapted from measures used in the *National Child Care Staffing Study* (Whitebook et al., 1990). Questions relating to accreditation added to both interviews were piloted with five center directors and five teachers. Minor adaptations to the interviews were made for the second round of interviews, based on feedback from the research assistants who used them at Time 1.

Directors provided information about the compensation and professional background of all staff employed at their centers. Throughout this report, director-based information is used to describe results for all teaching staff. Previous research suggests, however, that directors systematically provide higher estimates of staff earnings when compared to teachers' reports of their own earnings (Whitebook et al., 1990). We therefore supplemented director reports with teacher reports about their own compensation and background. Teacher reports were obtained only from those teachers we observed during the classroom observation; that is, a subset of all teachers employed at a center.

Classroom Observation

We selected the Early Childhood Environment Rating Scale (ECERS) (see box on next page) for this investigation, based on prior research on child care quality and children's experience of care (Helburn, 1995; Kontos et al., 1995; Whitebook et al., 1990). The ECERS provides information about appropriate caregiving and activities that occur within a particular classroom.

The ECERS and the NAEYC accreditation self-study criteria (known as the Early Childhood Classroom Observation) assess similar areas of teacher-child interaction, activities, materials and equipment. A comparison of scoring indicates that good-quality care as indicated by the ECERS corresponds to full compliance with a clear majority of NAEYC self-study criteria. We therefore expect that centers accredited by NAEYC would receive ECERS scores of 5 (good) or better. Both instruments fail to capture some components of quality or to deal

with them in sufficient depth, most notably issues related to the adult work environment and to cultural and linguistic sensitivity (Phillips, 1996; Chang, Muckelray, and Pulido-Tobiassen, 1996). We assessed these dimensions of quality using the interviews described above. For a more detailed comparison of the ECERS and the NAEYC accreditation criteria, see Appendix C.

To measure adult-child interactions, we selected the Arnett Scale of Caregiver Interaction (see box below), which in previous large-scale child care studies has been found to predict teachers' engagement with children and children's language development and security of attachment (Helburn, 1995; Howes, Phillips, and Whitebook, 1992). The Arnett Scale is used to rate a single teacher, in contrast to the ECERS, which is used to rate an entire classroom. Information about adult-child ratios was also collected during the observations.

PROCEDURES

One of several research assistants completed data collection in each center. The research assistant team was comprised of people with experience in the early childhood field; several also had prior research experience. The entire research team was trained to conduct observations and interviews during a four-day session that was held prior to data collection at both Time 1 and Time 2. Seven research assistants were employed at Time 1, two of whom also collected data at Time 2. The two experienced assistants, in addition to three new assistants, were trained and employed during Time 2. Inter-rater reliabilities were established to a criterion of 85-percent agreement for all observational measures prior to data collection. At mid-point, within-site reliability was re-established for all classroom observational measures, and exceeded 90 percent.

The **Early Childhood Environment Rating Scale** (ECERS) comprehensively assesses the day-to-day quality of care. It contains 37 items organized under seven categories:

- personal care routines,
- furnishings and displays for children,
- language-reasoning experience,
- fine and gross motor activities,
- creative activities,
- social development, and
- adult needs

Individual items are rated from a low of 1 to a high of 7. A rating of 3 on these scales indicates "minimally acceptable" quality, while 5 indicates "good" quality and 7 indicates "excellent quality."

The **Arnett Scale of Caregiver Interaction** measures teaching style. The 26-item scale rates:

- teachers' sensitivity, e.g., their degree of warmth, attentiveness and engagement,
- style, e.g., their degree of harshness, and their level of punitive and critical interactions, and
- detachment, e.g., their level of interaction with, interest in and supervision of children.

A score of 1 indicates that a given behavior is "never true," whereas a score of 4 indicates that the behavior is "often observed." Higher scores for sensitivity and lower scores for harshness and detachment are therefore considered desirable.

Following the initial phone call to directors at Time 1 and Time 2, research assistants contacted the directors again by phone to make appointments to collect data at the centers. In each center, data collection began with a two-hour classroom observation. Unless the program only operated in the afternoon, all observations were conducted in the morning. If two classrooms were observed in one center, observations occurred over two days, scheduled consecutively whenever possible. To select classrooms, researchers were asked to make a list of classrooms meeting the age criterion, and the third and fifth classrooms were selected. Following the observation, the research assistants arranged to interview the teachers, generally during lunch or nap time, sometimes at the end of the day, or if necessary, on another day. The director interviews occurred following the observations, typically in the afternoon. Every effort was made to accommodate participants' schedules, with the exception of scheduling interviews prior to observations. Director interviews lasted an average of one-and-one-half to two hours. Teaching staff interviews lasted from half an hour to one hour.

PLAN OF ANALYSIS

First, we described each center with respect to structure, observed quality, director and teaching staff background, wages, benefits and working conditions, and caregiver and director stability and turnover at Time 1 and Time 2. These descriptions were derived separately for all teaching staff and for observed teaching staff, and are identified in the text as such.

Next, we used analysis of variance and chi-squares to compare centers that achieved accreditation, those that participated in self-study but were not validated, and those that did not seek accreditation. We also classified the centers which were seeking accreditation according to four different levels of support: none, limited, moderate or intensive. To test characteristics that differed among teaching staff of varying skill levels who remained at or left their jobs, we used discriminant function analyses. We used multiple regression techniques to test hypothesized relations between different center attributes such as quality, positive staffing and accreditation. Where possible, we tested the relations for the center as a whole as well as at the observed teacher level. The unit of analysis is specified in the text where appropriate.

STUDY REVIEW

A number of experts provided technical, conceptual and policy-oriented reviews of the study design, analyses and findings (see Acknowledgments), and made valuable suggestions that improved the design, implementation and dissemination of this report.

VARIABLES DEFINED

We redefined several variables used in previous studies, and created new composite variables for this study. These include background and background climate, turnover, positive staffing, and turnover climate. Each is described below and summarized in the glossary (see Appendix D).

■ Caregiver and director background and background climate

Because of variations in job title, functions and requirements across settings,

and the intertwined relationship between training and formal education, Howes (1995) has re-conceptualized the child care work force nationally in terms of three background levels which combine training and formal education in early childhood education. The first level consists of staff who have a high school education or less, and minimal or no training in early childhood education. The second background category consists of staff who have some college education and some early childhood training. The third background category consists of staff who have a four-year college degree or advanced training in early childhood education.

Information about the professional background of teaching staff in this study was drawn from two sources. Directors reported information about the education and training background of every teaching staff member employed in the center. Observed staff provided information about their own background during the interviews. Because of the high levels of formal education and early childhood training among staff in this study, additional levels of background were computed to provide more fine-grained descriptions of staff and directors represented in the sample. These background levels are used in most of the analyses reported. Specifically, distinctions are drawn among staff with:

- six units or less of college-level early childhood training (Level 1);
- more than six and up to 24 units of college-level early childhood training (Level 2);
- at least 24 units of college-level early childhood training or some type of early childhood certification, and additional college courses in other disciplines (Level 3);
- a completed bachelor's degree in a field other than early childhood or child development (Level 4); and
- a bachelor's degree with advanced early childhood training or an advanced degree in early childhood education (Level 5).

Background climate refers to the percentage of teaching staff with high or low background levels that are employed in a center. Because nearly three-quarters of teaching staff had Level 2 or Level 5 backgrounds, these categories are used in several analyses to describe the background climate of the centers. With a sample of less-educated and trained teaching staff, high and low background might be defined differently.

■ Caregiver and director stability and turnover

Directors were also asked during Time 1 and Time 2 to provide a census of employees in their center by name, wage and educational background. Names provided at Time 2 were compared with those given at Time 1 to create an actual count of the number of staff who stayed and left. This constitutes the first source of turnover information (labeled Time 1-Time 2 turnover) which is available for all employed teaching staff, as well as observed teaching staff.

Directors were asked to report annual turnover for the year prior to Time 1 data collection and for the year prior to Time 2 data collection. Controlling for differences in the time between visits, correlations between director reports of annual turnover at Time 2 and counts of staff who departed were

examined to assess the accuracy of director reports. Because these variables measure the same phenomenon for much of the same period of time, they should be highly correlated. As indicated in Table 3-2, however, director reports and actual turnover for assistant teachers were not significantly correlated. Correlations for teachers and all teaching staff were only moderate, and those for teacher-directors and directors were somewhat stronger. Therefore, Time 1-Time 2 turnover data are used rather than director reports of annual turnover in most analyses because they provide a more accurate account. Previous examinations of turnover, it should be noted, have relied on director reports rather than on actual counts (Helburn, 1995; Whitebook et al., 1990).

■ Positive staffing

"Positive staffing" is comprised of four categories of teaching staff:

- highly-skilled or educated staff who left their jobs between Time 1 and Time;
- minimally-skilled or educated staff who remained at their jobs;
- minimally-skilled or educated staff who left; and
- highly-skilled or educated staff who remained.

The positive staffing variable is ordered from least to most desirable, beginning with highly-skilled teaching staff leaving the job, followed by minimally-skilled teaching staff remaining on the job, minimally-skilled teaching staff leaving the job, and highly-skilled teaching staff remaining on the job. Leaving is considered more desirable than staying for minimally-skilled teaching staff because, although it is more disruptive to children, the presence of a minimally-skilled caregiver does not contribute positively to children's development (Howes and Hamilton, 1992a).

Table 3-2 Means and Correlations for Two Different Measures of Turnover: Annual Director Reports and Actual Counts of Staff Departures between Time 1 and Time 2

	Mean Director Reports of Annual Turnover Time 2	Mean Counts of Turnover, between Time 1 and Time 2	Correlations r
Teacher turnover	34	50	47***
Assistant turnover	34	62	27
Teacher director turnover	30	36	68***
Director turnover	08	34	56***
All teaching staff turnover	26	52	55***

***$p < .001$

For observed teaching staff, positive staffing combines information about teacher skill, based on observed teacher sensitivity scores at Time 1 and whether the teacher remained on the job at Time 2. Teachers with sensitivity scores of three or greater were considered highly skilled. Those with scores below three were considered less skilled.

Because assessments of sensitivity were not made on all teaching staff in the sample, background level was used to create the positive staffing variable for all employed staff. Background level, overall quality ratings and sensitivity have been found to be strongly associated in previous research (Phillips et al., 1996; Helburn, 1995; Whitebook et al., 1990). Despite the high levels of education in this sample, we found a small but significant correlation between sensitivity and background ($r = .24$, $p < .01$). Teaching staff were classified as "low" in background if they had less than a four-year college degree and no specialized early childhood training. They were classified as "high" in background if they had a four-year college degree or higher, and college-level early childhood training.

■ Turnover climate

The "turnover climate" of a center is based on three components. The first refers to the overall turnover rate of staff in a center. The second is the percentage of teachers in each positive staffing category (low background leave, high background leave, high background stay, and low background stay). The third is whether the director remained at the center between Time 1 and Time 2. There was a small but significant correlation among these turnover variables. For each of the various analyses below, the text will indicate which of these three components of turnover climate has been used.

THE STUDY SAMPLE IN CONTEXT

Chapter 4

Summary: This chapter discusses the extent to which the study sample is representative of center-based child care across the country and the national pool of NAEYC-accredited centers.

OVERVIEW

This study is the first large-scale longitudinal assessment of the NAEYC accreditation process. We examined centers when they embarked upon the self-study process, tracked them over a period of time, and compared them to other centers in their communities. We are thus able to address questions about the degree to which centers seeking accreditation improve in quality, the level of quality that different centers achieve, and the types of support that are necessary to assist them. These findings are of interest beyond the communities which we studied, because many policy makers, employers, funders and community advocates across the country are grappling with how to most effectively improve the quality of child care available to young children and their families. Some, however, may question the extent to which the findings presented in this report about NAEYC accreditation can be generalized to their own and other communities.

Our sample, as described in the previous chapter, focuses on centers predominantly serving preschool-age children in a mix of largely middle- and low-income communities. Our findings do not focus specifically on care for infants, toddlers or school-age children, although many of the centers in the study served these age groups. A high proportion of centers in the sample were operated on a nonprofit basis, because nonprofits predominated among the centers in this sample seeking NAEYC accreditation. For-profit care has generally been associated with lower quality (Phillips et al., 1996; Whitebook et al., 1990), and thus our sample may, on average, consist of higher-quality centers than in the population as a whole. As detailed in Chapters 5 and 6, however, the relatively low level of quality and the high rates of turnover among many of the centers in our sample, including some accredited centers, suggest that these centers face the same problems that plague child care programs nationwide (Phillips et al.,

1996; Helburn, 1995; Whitebook et al., 1990).

Below, we provide a more in-depth assessment of our sample by contrasting it with the population of centers represented in the most recent large-scale national assessment of center-based care, the *Cost, Quality and Child Outcomes in Child Care Centers* study (Helburn, 1995), and in salary surveys for the three communities from which our sample is drawn. We consider issues of center structure and observed level of quality, as well as staff background, compensation and stability. We also compare the centers in our sample which achieved accreditation with NAEYC-accredited centers nationally.

COMPARISONS OF THE SAMPLE WITH OTHER LOCAL AND NATIONAL SAMPLES

We compared our sample with national and local samples of center-based child care. The *Cost, Quality and Child Outcomes in Child Care Centers* study, released in 1995, includes quality and cost data collected during the spring of 1993 in 400 centers: 50 for-profit and 50 nonprofit, randomly-chosen centers in each of four states, California, Colorado, Connecticut and North Carolina. In addition, salary and related survey data for the three communities represented in our sample were collected in Santa Cruz in 1992, and in the Palo Alto and San Jose areas in 1994.

Table 4-1 Early Childhood Environment Rating Scale (ECERS) Scores: Comparison of Full Sample with California and National Samples of the Cost, Quality and Child Outcomes Study

ECERS Scores*	Time 1[a]	Time 2[b]	CQCO Study California Preschool Sample[c]	CQCO Study National Preschool Sample[d]
Average score (SD)	4.33 (.72)	4.43 (.92)	4.49 (.88)	4.22 (.99)
Percent scored at 5 or above*	16%	25%	18%	14%

[a]N = 92 classrooms. [b]N = 92 classrooms. [c]N = Scores for 100 classrooms. [d]N = 392 classrooms.

*A score of less than 3 indicates poor quality care. A score of 3 through 5 indicates mediocre quality. A score of 5 or greater indicates developmentally appropriate or good care.

The data in columns 4-5 are from *Cost, Quality and Child Outcomes in Child Care Centers: Public Report* (p. 30), by the Cost, Quality and Child Outcomes Study Team (1995). Reprinted with permission.

Center Structure

Centers represented in our sample were similar in size and income sources to centers across the country. Payments made by parents constituted the majority of revenue for centers in this study (78 percent) and nationally (72 percent). Public funds from federal, state and local sources comprised less than a quarter of the revenue for centersin this study (18 percent) and nationally (22 percent), and private donations and corporate contributions made up the remainder. Centers ranged in size from small (under 30 children) to large (more than 120 children). The average center was mid-sized, with an enrollment of 72 children (SD = 57) at Time 1. The average center enrollment in the *Cost, Quality and Child Outcomes in Child Care Centers* study (Helburn, 1995) was 70 children (SD = 47).

Observed Quality

The Early Childhood Environment Rating Scale (ECERS) was used to assess overall classroom quality. Centers in our study at Time 1 and Time 2, as in the *Cost, Quality and Child Outcomes in Child Care Centers* study, were rated as mediocre on average (see Table 4-1). At Time 2, a number of centers had improved in quality, although three-quarters were still rated as mediocre.

The number of children cared for by each adult is also indicative of center quality. A ratio of .15 is equivalent to one adult to approximately seven children. The ratios observed in this study at Time 1 (M = .15, SD = .05) and Time 2 (M = .16, SD = .08) were comparable to preschool ratios reported in the *Cost, Quality and Child Outcomes in Child Care Centers* study for California centers (M = .14, SD = .06) and for the national sample (M = .16, SD = .11).

Caregiver interactions with children were assessed using the Arnett Scale of Caregiver Interaction; scores for teacher sensitivity, harshness and detachment were derived for each observed teacher. Teachers observed in this study were rated, on average, as more sensitive and less harsh than the national sample of the *Cost, Quality and Child Outcomes in Child Care Centers* study, as indicated in Table 4-2.

Table 4-2 Caregiver Interaction Scale Ratings: Comparison of Full Sample with California and National Samples of the Cost, Quality and Child Outcomes Study

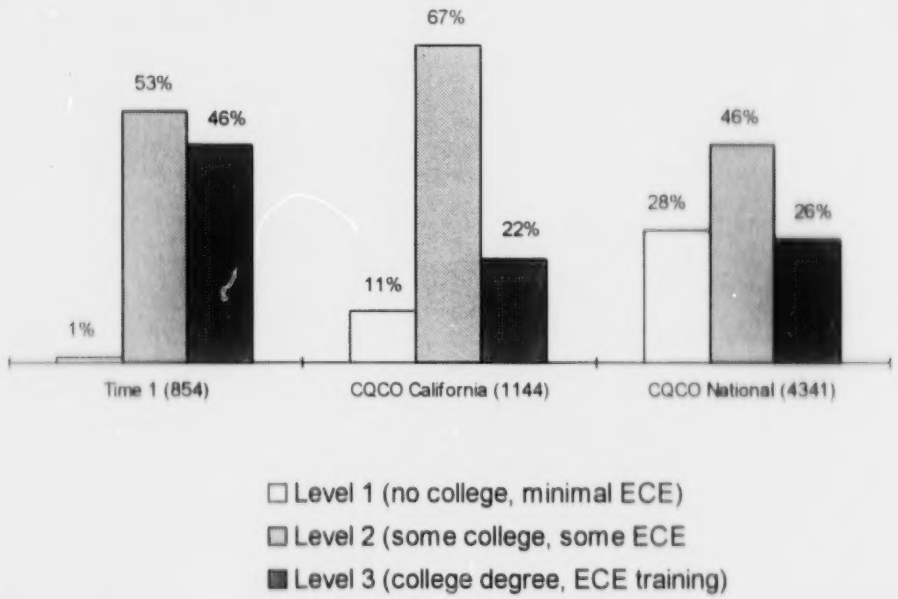
Interaction Scores*	Time 1[a]	Time 2[b]	CQCO Study California Preschool Sample	CQCO Study National Preschool Sample[d]
	Average Score (Standard Deviation)			
Detachment	1.51(.59)	1.61(.61)	1.50(.59)	1.70(.64)
Harshness	1.50(.61)	1.50(.60)	1.70(.64)	1.80(.69)
Sensitivity	2.99(.63)	3.05(.58)	2.80(.68)	2.70(.73)

[a]N = 148 classrooms. [b]N = 147 classrooms. [c]N = Scores for 82 classrooms. [d]N = 511 classrooms.

*For detachment, harshness and sensitivity, a score of 1 indicates behavior was uncommon for a teacher; a score of 4 indicates behavior was characteristic of a teacher.

The data in columns 4-5 are from "Classroom process and classroom structure," by L. Phillipsen, D. Cryer, and C. Howes (1995), in *Cost, Quality and Child Outcomes in Child Care Centers: Technical Report* (p. 143), S. Helburn (Ed.) (1995). Adapted with permission.

Figure 4-1 Teaching Staff Educational Background: Comparison of Full Sample with California and National Samples of the Cost, Quality and Child Outcomes Study



Note: Sample size represents the number of employed teaching staff.

Teaching Staff Background

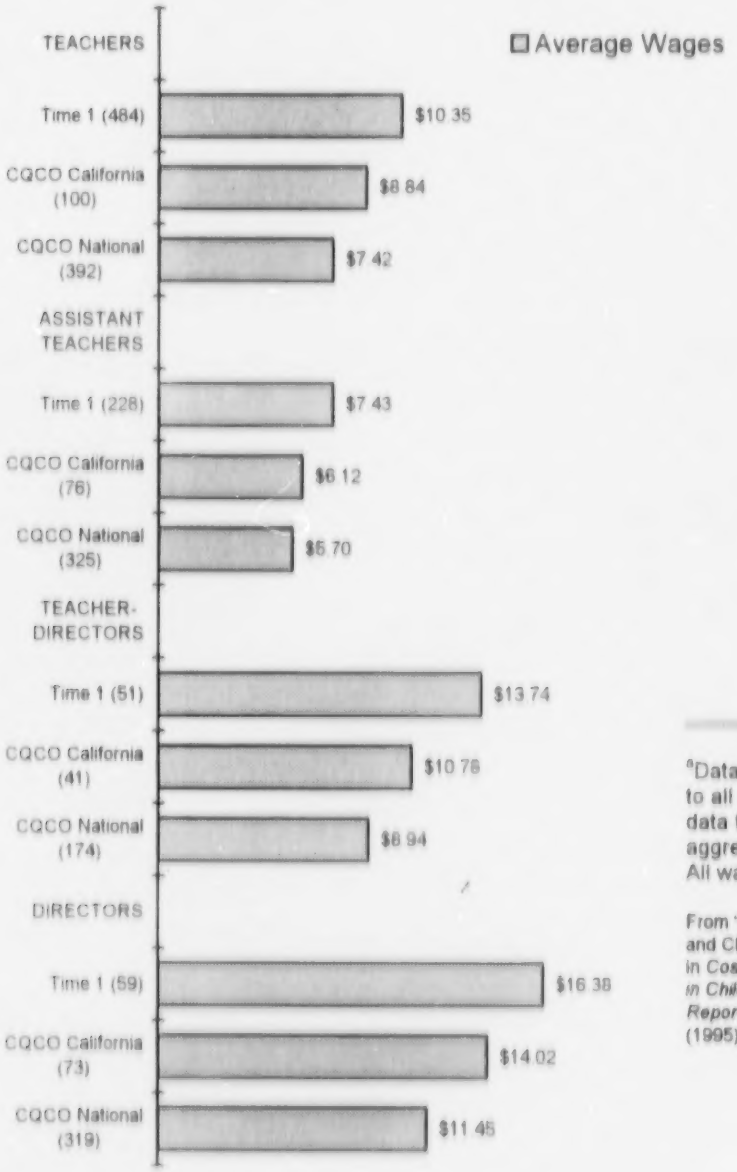
As indicated in Figure 4-1, teaching staff in this study had completed, on average, higher levels of formal education and specialized early childhood training than their counterparts nationally. In part, this reflects the more stringent regulatory environment in the state: all teaching staff in California child care centers are required to have some college-level training, ranging from six to 24 credits in early childhood education. In contrast, many states require no pre-service or ongoing training for teaching staff (Morgan et al., 1993). In this study, there were fewer teachers with Level One (no college) and more teachers with Level Three education and training (four-year college degree) than in other parts of the country. Teaching staff in this sample were also more highly educated than the California sample of the *Cost, Quality and Child Outcomes in Child Care Centers* study, which was drawn from Los Angeles County, an area in which centers are known to pay less, and to employ teaching staff with less formal education and training, than do centers in northern California (National Center for the Early Childhood Work Force, 1996).

Figure 4-2 Director Reports of Mean Starting and Highest Wages for Each Staff Position: Comparison of Full Sample and Local Communities

(a) N = 92 centers. (b) N = 104 centers. (c) N = 106 centers; Santa Cruz data was collected in 1992 and reported in 1994 dollars (U.S. Department of Labor, 1996).

The data reported for San Mateo are from *San Mateo County Survey of Child Care Salaries, Benefits and Working Conditions 1994* (p. 2-3, by J. Mihaly (1995); reprinted with permission. Data from Santa Clara are from *A Profile of the Santa Clara County Child Care Center Work Force* (pp. 8-11), by A. Burton, L. Sakai, and M. Whitebook (1966); reprinted with permission. The data from Santa Cruz are from *Survey of Child Care Center Salaries, Benefits and Working Conditions: Santa Cruz County, California 1992* (p. 4), by A. Burton, M. Whitebook, and L. Sakai (1992); reprinted with permission.

Figure 4-3 Director Reports of Mean Current Wages: Comparison of Full Sample[a] with California and National Samples of the Cost, Quality and Child Outcomes Study



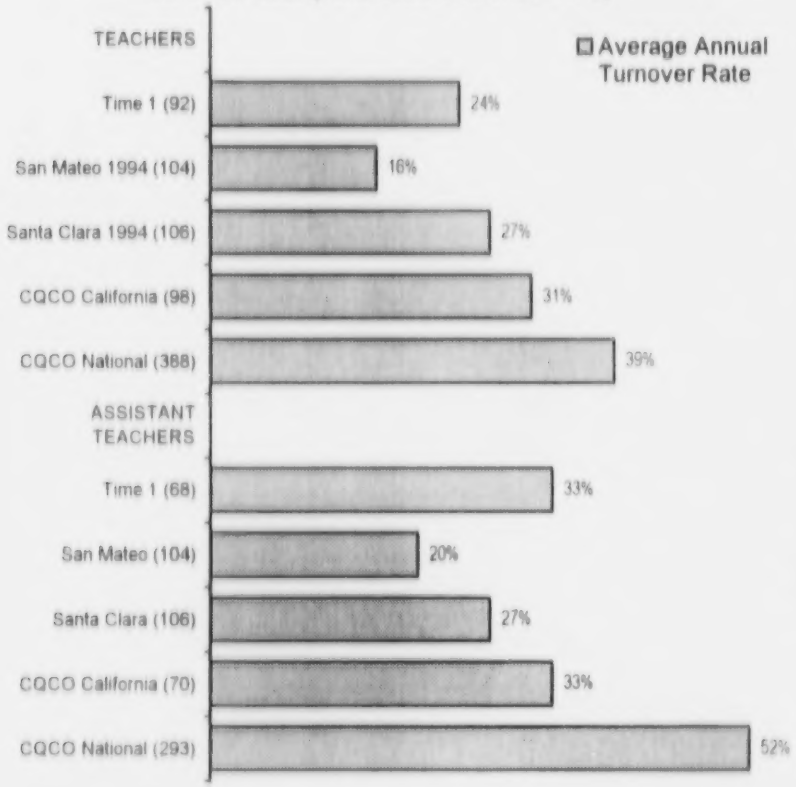
[a]Data reported for Time 1 refer to all employed staff. Wage data from CQCO study are aggregated at the center level. All wages are in 1994 dollars.

From "Center Structure: Staff Policies and Characteristics," by S. Helburn, in *Cost, Quality and Child Outcomes in Child Care Centers: Technical Report* (p. 108), S. Helburn (Ed.) (1995). Adapted with permission.

Wages, Benefits and Working Conditions

Based on director reports for all employed teaching staff, the median wage was $9.00 per hour at Time 1 and $9.63 per hour at Time 2. As indicated in Figure 4-2, average starting wages and highest wages for teaching staff and directors, at Time 1, were comparable to those reported in other studies of the communities from which the sample was drawn. Figure 4-3 compares director reports of wages for the entire sample with the California and national samples of the *Cost, Quality and Child Outcomes in Child Care Centers* study. Higher salaries in different regions of the country are attributed to variations in the cost of living, as well as different requirements for staff (Helburn, 1995). Benefits and working conditions were comparable in this sample to the local area, and marginally better than those offered in other parts of the country. Forty-eight percent of centers in this study and 30 percent of centers nationally, for example, offered fully-paid health insurance to teaching staff.

Figure 4-4 Director Reports of Annual Percentage Staff Turnover: Comparison of Full Sample and Surveys of San Mateo and Santa Clara Counties with California and National Samples of the Cost, Quality and Child Outcomes Study



Data are adapted with permission from the following: "Center Structure: Staff Policies and characteristics," by S. Helburn, in *Cost, Quality and Child Outcomes in Child Care Centers Technical Report* (p. 118), S. Helburn (Ed.) (1995). *San Mateo County Survey of Child Care Salaries, Benefits and Working Conditions: 1994* (p. 4), by J. Mihaly (1995). *A Profile of the Santa Clara County Child Care Center Work Force* (p. 12), by A. Burton, L. Sakai and M. Whitebook (1996).

Teaching Staff Stability and Turnover

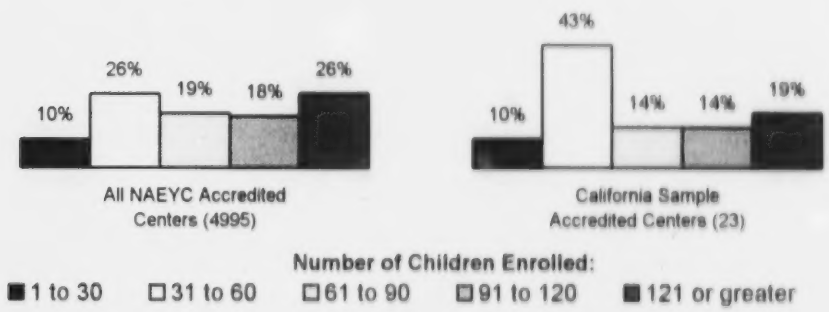
As indicated in Figure 4-4, directors' reports of turnover—based on the number of staff that had left in the previous year, divided by the number on the payroll—were comparable in this study to those for other California samples, and lower than those reported for teaching staff nationally. Teacher tenure averaged 4.1 years (SD = 4.5) in our sample, compared to 2.9 years (SD = 1.8) in the *Cost, Quality and Child Outcomes in Child Care Centers* study.

COMPARISONS OF ACCREDITED CENTERS IN THE SAMPLE AND NATIONALLY

Because our sample was drawn from three neighboring communities in one state, we were concerned that our pool of accredited centers might differ from the larger pool of NAEYC-accredited centers across the country. We contacted NAEYC's National Academy of Early Childhood Programs for information about the approximately 5,000 currently accredited centers nationwide as of fall 1996 (see Chapter 1, Figure 2). Seventy-one percent of all NAEYC-accredited centers operate on a full-day basis. A similar proportion (78 percent) of centers achieving accreditation in our sample provided full-day services for children. As indicated in Figure 4-5, accredited centers in our sample, while somewhat smaller on average, did not differ dramatically in size from the full population of NAEYC-accredited centers.

Although NAEYC does not keep information about the auspices or funding sources of centers seeking and achieving accreditation, anecdotal reports suggest that for-profit centers are increasingly seeking NAEYC accreditation. In particular, several of the large-scale for-profit child care chains—including Children's World, Bright Horizons and KinderCare—encourage and support their centers to seek NAEYC accreditation (Bredekamp and Glowacki, 1996). Although some for-profit centers were among those in our sample achieving accreditation, most were not affiliated with for-profit national chains.

Figure 4-5 Center Size: Comparison of Accredited Centers in Present Study and Nationally



Because chain child care centers have been associated with lower quality (Phillips et al., 1996; Whitebook et al., 1990), accredited centers in our sample may represent a somewhat higher-quality pool than accredited centers nationally.

SUMMARY

Center structure and finances, observed level of classroom quality and observed adult-child ratios were similar for the sample of centers in this study when compared to centers in other communities across the country. Teaching staff in this sample, however, had completed somewhat more formal education and specialized early childhood training than their counterparts in other parts of California and the nation. Reflecting their higher levels of education as well as the local cost of living, teaching staff and directors in the sample earned higher salaries than those represented in the national sample, but average compensation for their communities. Teaching staff were rated as more sensitive and less harsh than in other studies, reflecting their higher educational levels, which have been associated with more positive adult-child interactions (Helburn, 1995; Whitebook et al., 1990). Annual rates of turnover were similar to those found in other California studies and somewhat lower than national reports.

These comparisons support the characterization of centers in our sample as somewhat higher in quality than the range of programs found nationally. Despite the better-trained work force in our sample, centers in our study face similar challenges in providing high-quality care and in maintaining a stable and qualified staff, as do the vast majority of programs nationwide.

FINDINGS: NAEYC ACCREDITATION AND QUALITY

Chapter 5

Summary: This chapter compares quality ratings for the three groups of centers in the study: those that participated in self-study and achieved accreditation, those that participated in self-study but did not advance to validation, and those that did not seek accreditation.

OVERVIEW

Sixty percent of the centers in this study participated in self-study, of which fewer than half (42%) advanced to the validation phase of the NAEYC accreditation process (see Figure 5-1). One-quarter of all centers in the study succeeded at becoming accredited by the time of our second visit. The second visits occurred shortly after a center had achieved accreditation status, or—in the case of those centers that had participated in self-study but had not become accredited, and those that had not been seeking accreditation—approximately two years after the initial visit. According to the National Academy of Early Childhood Programs, centers that achieve accreditation typically progress to the validation phase within eighteen months to two years of beginning their self study.

The following discussion compares quality ratings for centers that achieved accreditation, centers that participated in self study but did not advance further, and centers that did not seek accreditation. Specifically, we draw comparisons in terms of their initial level of quality, and changes between Time 1 and Time 2 in the overall quality of classrooms and staff-child interactions.

Finding One

Centers that achieve NAEYC accreditation demonstrate higher overall classroom quality at the time of embarking on the self-study process, and show greater improvement in overall quality ratings, staff-child ratios and teacher sensitivity scores, than do centers that participate in self-study but do not advance to the validation phase. Centers not advancing to validation demonstrate no improvement in classroom quality, staff-child ratios or staff-child interactions.

Table 5-1 Comparison of Observed Quality Among Centers Achieving,[a] Seeking[b] and Not Seeking Accreditation[c]

	Time One			Time Two		
	M	SD	Range	M	SD	Range
ECERS						
Accredited	4.58	73	3.19-5.99	5.22*	71	3.88-6.41
Seeking, not yet accredited	4.38	70	3.35-6.24	4.38	77	3.30-6.74
Non seeking, not accredited	4.12	68	2.89-5.39	3.99	83	2.42-6.28
F	3.22**	accredited > not-seeking		17.64***	accredited >all	
Sensitivity						
Accredited	3.05	63	1.63-4.00	3.36	56	2.20-4.00
Seeking, not yet accredited	3.00	49	1.80-3.80	3.02	50	1.85-4.00
Non seeking, not accredited	3.02	56	1.90-4.00	2.95	47	1.90-4.00
F	not significant			4.99**	accredited > all	
Harshness						
Accredited	1.33	47	1.00-2.96	1.30	41	1.00-2.67
Seeking, not yet accredited	1.41	48	1.00-2.85	1.50	49	1.00-3.11
Non seeking, not accredited	1.57	58	1.00-2.89	1.55	59	1.00-3.44
F	not significant			not significant		
Detachment						
Accredited	1.46	54	1.00-23.25	1.50	66	1.00-3.75
Seeking, not yet accredited	1.48	46	1.00-2.50	1.59	49	1.00-2.75
Non seeking, not accredited	1.52	50	1.00-3.00	1.66	52	1.00-3.00
F	not significant			not significant		
Observed Ratio						
Accredited	20	07	12- 35	21	80	10- 42
Seeking, not yet accredited	17	06	09- 27	18	07	09- 40
Non seeking, not accredited	15	06	04- 34	16	06	08- 33
F	4.14*	accredited > not seeking		3.69*	accredited > all	

Note: Early Childhood Environment Rating Scale (ECERS) scores greater than 5 indicate good or developmentally appropriate classroom quality; scores below 5, but greater than 3, indicate mediocre quality. No accredited centers in the sample scored below 3. For detachment, harshness and sensitivity, a score of 1 indicates that a behavior was uncommon for a teacher, and a score of 4 indicates that a behavior was characteristic of teacher. For ratios, lower percentages indicate more children cared for by each adult.

[a] n = 23 [b] n = 32 [c] n = 37

At Time 1, centers that achieved accreditation received higher overall classroom quality scores than did other centers, and staffed their classrooms with better adult-child ratios than did centers not seeking accreditation (see Table 5-1). There were no differences in observed teaching staff sensitivity at Time 1. As a group, however, centers that achieved accreditation began the self-study process with mediocre classroom ratings ($M = 4.58$, $SD = .73$); as indicated in Figure 5-2, only one-quarter were rated as good or better in quality. Fourteen percent of all other centers were also rated as good or better in overall classroom quality at Time 1.

At Time 2, as indicated in Table 5-1, centers which became accredited during the time of our study demonstrated greater improvement and had achieved a higher level of quality than centers that had sought accreditation but chose not to advance to validation, or centers that had not sought accreditation ($F(2, 89) = 9.18$, $p < .001$). Specifically, centers that achieved accreditation demonstrated greater increases in Early Childhood Environment Rating Scale (ECERS) scores and teacher sensitivity ratings, and better adult-child ratios, than all other centers (see Table 5-1 and Figures 5-3, 5-4, and 5-5). Centers not advancing to validation demonstrated no improvements between Time 1 and Time 2.

Figure 5-1 Description of Sample

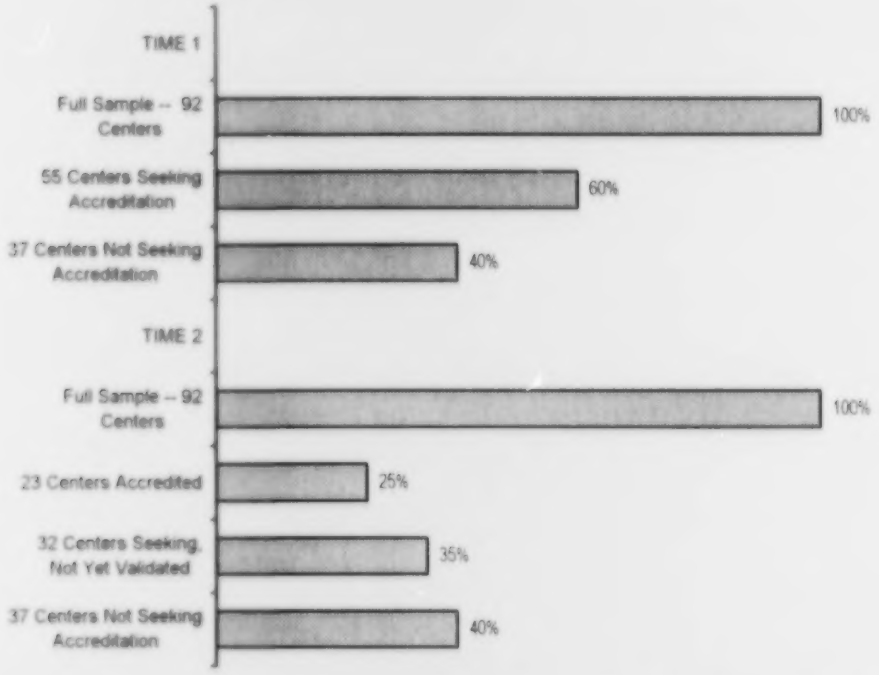


Figure 5-2 Early Childhood Environmental Rating Scale Scores Time 1: Non-Accredited Centers and Centers that Became Accredited

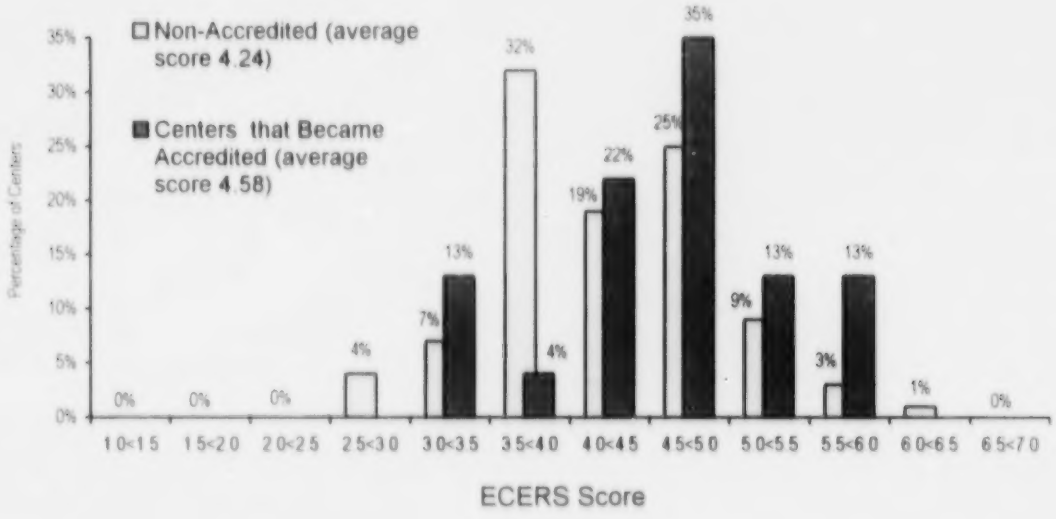
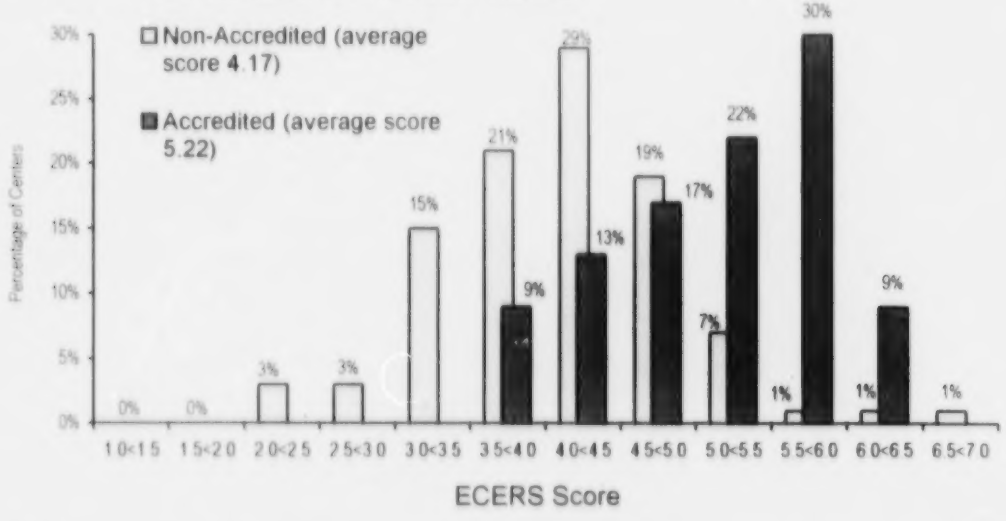


Figure 5-3 Early Childhood Environment Rating Scale Scores Time 2: Non-Accredited and Accredited Centers



Note: A rating of 3 on these scales indicates "minimally acceptable" quality, while 5 indicates "good" quality and 7 indicates "excellent" quality.

Figure 5-4 Early Childhood Environment Rating Scale Scores: Accredited Centers at Time 1 and Time 2

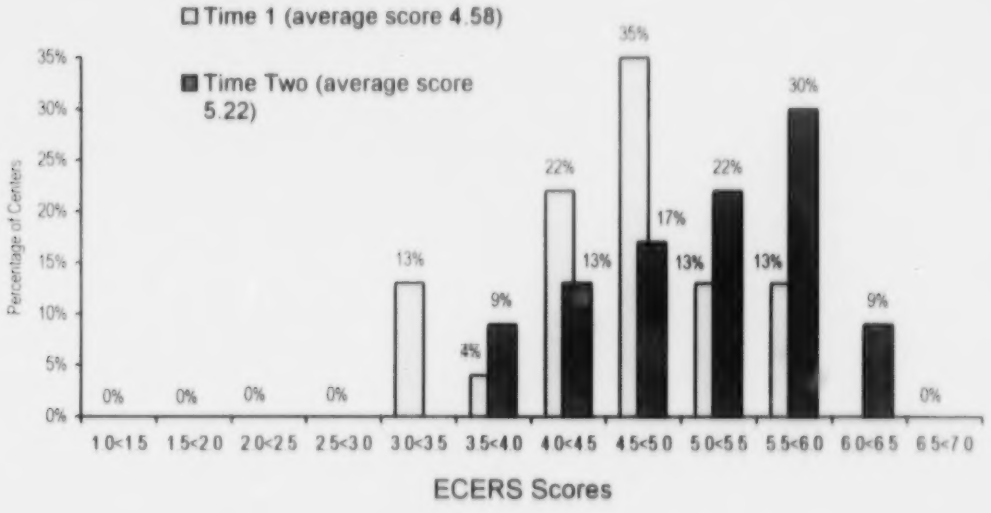
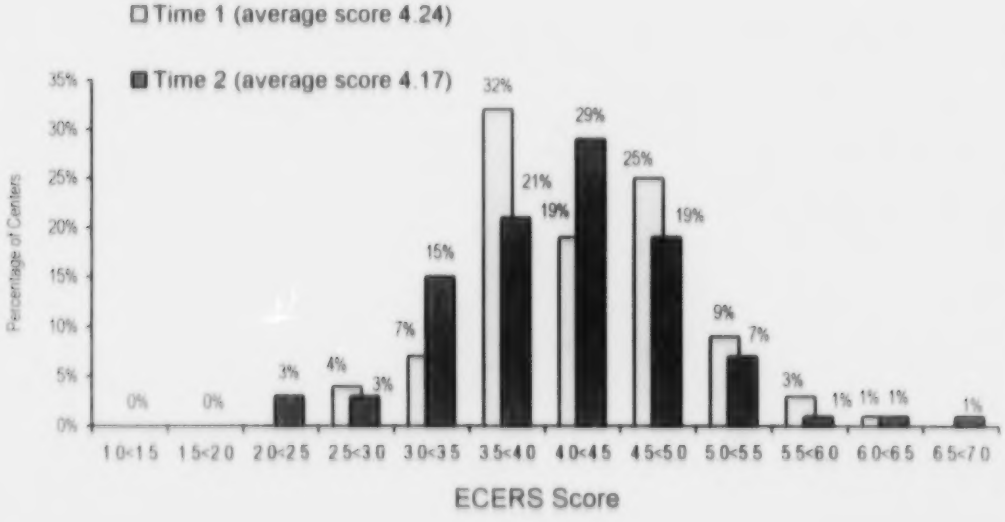


Figure 5-5 Early Childhood Environment Rating Scale Scores: Non-Accredited Centers at Time 1 and Time 2



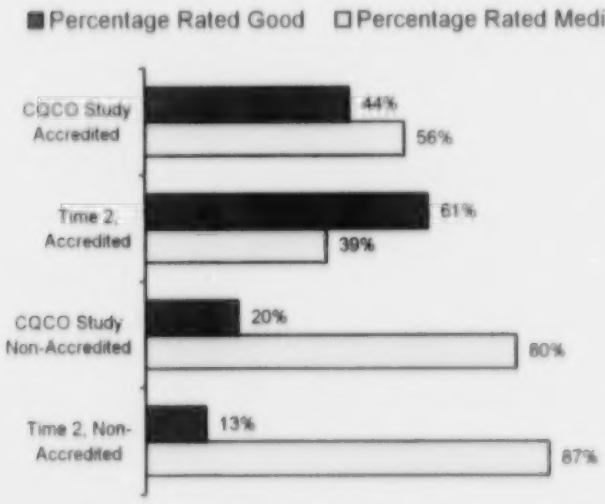
Note: A rating of 3 on these scales indicates "minimally acceptable" quality, while 5 indicates "good" quality and 7 indicates "excellent" quality.

Finding Two

Despite improvements made by centers achieving NAEYC accreditation, nearly 40 percent continue to be rated as mediocre in quality.

All but one of the centers in our study that underwent validation became accredited. Although the centers in the study that achieved NAEYC accreditation received a good average quality rating (5.22 on the ECERS, as indicated in Table 5-1), a sizable share (9 out of 23) received a mediocre quality rating when observed at Time 2 (see Figure 5-4). The Time 2 observation occurred shortly after centers had been assessed by NAEYC validators. (See Appendix C for a description of the Accreditation assessment process and a comparison of this process with the ECERS). This finding is consistent with findings for NAEYC-accredited centers in the *Cost, Quality and Child Outcomes in Child Care Centers* study, the most recent large-scale national study of center-based child care. As indicated in Figure 5-6, more than a third (39 %) of the accredited centers in the present study, and more than half (56%) of the centers in the *Cost, Quality and Child Outcomes in Child Care Centers* study, fall in the mediocre range of quality. While NAEYC-accredited centers are several times more likely than other centers in the community to be rated as high in quality, NAEYC accreditation clearly falls short as a consistent standard of excellence.

Figure 5-6 Quality Ratings of Accredited Centers: Cost, Quality and Child Outcomes Study and the Present Study



* In the California sample of the *Cost, Quality and Child Outcomes in Child Care Centers* study, three out of 100 centers in the sample were accredited. Of those, two were rated as good or better, and one was rated as mediocre. In the present study, 6% of the non-accredited centers were rated as poor. Twenty percent of the non-accredited centers in the *Cost, Quality and Child Outcomes in Child Care Centers* study were rated as poor. No accredited centers were rated as poor in either study

Finding Three

NAEYC-accredited centers are no more likely than non-accredited centers to meet the linguistic needs of children who speak languages other than English.

In an increasingly diverse society, quality of care cannot simply be measured by the classroom environment and activities, but must also include an assessment of the ability of teaching staff to communicate with children and families from various backgrounds, many of whom speak languages other than English. In each of the three center groups, over half of the directors and one-third of the teaching staff in our sample reported that parents have difficulty communicating with staff at their center because of language barriers. Advocates and researchers increasingly are calling attention to the importance of a linguistic match between young children and their caregivers for optimal language, social and cognitive development (Chang and Sakai, 1993). The issue of linguistic sensitivity, however, is not addressed by the NAEYC and ECERS assessments (see Appendix C). In the present study, therefore, we explored the issue of linguistic sensitivity by inquiring about the languages spoken by each child in the observed classrooms and by the adults who worked with the children.

Specifically, we wanted to know whether children who spoke languages other than English had a teacher who could communicate with them in their home language. All observed classrooms with children who spoke English had teachers who spoke English also, but we found no significant differences in accredited and non-accredited centers' ability to meet the needs of children who spoke languages other than English. Only 39 percent of non-accredited and 35 percent of accredited observed classrooms employed a Spanish-speaking teacher for Spanish-speaking children. Although 31 percent of accredited observed classrooms served Chinese-speaking children, none of these classrooms employed Chinese-speaking teachers. Eleven percent of non-accredited and 8 percent of accredited observed classrooms served children who spoke Tagalog or Vietnamese, but none of these classrooms were staffed with teachers who spoke these languages.

Finding Four

Nonprofit status, higher wages paid to teaching staff, and the retention of skilled teachers, in combination with NAEYC accreditation, are predictors of high quality in child care centers.

If NAEYC accreditation alone does not guarantee high-quality early care and education services, what additional information can help parents, policy makers, prospective employees, resource and referral staff and others to identify high-quality programs? We used hierarchical multiple regression to address this question with ECERS scores as the outcome measure. Our research design allowed us to examine predictors of quality at both the classroom level (e.g., based on self-reported teacher wages and educational backgrounds) and at the center level (e.g., based on data from directors for all employed teaching staff).

Initially, we focused our analysis on the classroom level in each center (see Table 5-2). We first examined the roles that auspices, and

Table 5-2 Multiple Regression Predicting Quality at Time 2 from Control Variables, Characteristics of the Classroom and Center, and Accreditation (Classroom Level)

Predictor Variables	R	R^2	Final β	sr^2	t
Control Variables	.23	.05			
Auspices			.15	.13	2.81**
Income			.02	.01	.36
Classroom and Center Characteristics	.43**	.18			
Teacher background			.06	.28	.11
Wages			.16	.25	2.65**
Positive staffing			.13	.15	2.41**
Background climate			.15	.33	2.13*
Turnover climate			.01	.25	.19
Accreditation	.64**	.40	.49	.52	9.57***

**p < .01, ***p < .001.

Table 5-3 Multiple Regression Predicting Quality at Time 2, from Control Variables, Characteristics of the Center, and Accreditation (Center Level)

Predictor Variables	R	R^2	Final β	sr^2	t
Control Variables	.29**	.09			
Auspice			.15	.13	1.78
Income			.02	.01	.37
Center Characteristics	.51**	.26			
Wages of all teaching staff			.45	.40	3.71**
Turnover climate			.23	.23	2.23*
Background climate			.09	.36	.73
Accreditation	.69**	.48	.48	.54	5.68**

*p < .05 **p < .01, ***p < .001

income levels in the community where centers operate play in predicting quality. Auspices emerged as a significant predictor of high quality, with nonprofit centers providing higher-quality care than for-profit centers.[1]

Next, we examined five additional characteristics: 1) observed lead teacher background, 2) observed lead teacher salary, 3) "positive staffing," a high value indicating that a teacher rated as sensitive stayed in the same classroom throughout the course of the study, 4) background climate, i.e., the percentage of teachers currently working in the center with advanced educational and training backgrounds, and 5) turnover climate, defined in this analysis as the percentage of teachers with high educational backgrounds who stayed in the center over the course of the study. These characteristics increased our ability to predict quality; the retention of skilled teachers, the wages of lead teachers, and the background climate of centers were the most important predictors of high-quality care. Finally, we tested whether being accredited further contributed to the prediction of quality, and as expected, it did.

We then tested these relationships for the entire center, using wages for all teaching staff, background climate and turnover climate (see Table 5-3). Again, high-quality centers were characterized by nonprofit status, higher teacher wages, retention of well-qualified teachers, and accreditation. Thus, in seeking to identify high-quality programs, information about accreditation that is augmented by information about for-profit or nonprofit status, wages paid to teaching staff relative to the cost of living in the community, the educational background of the teaching staff, and the retention rates among qualified teachers, will provide a higher degree of assurance than will any of these variables alone—including accreditation status.

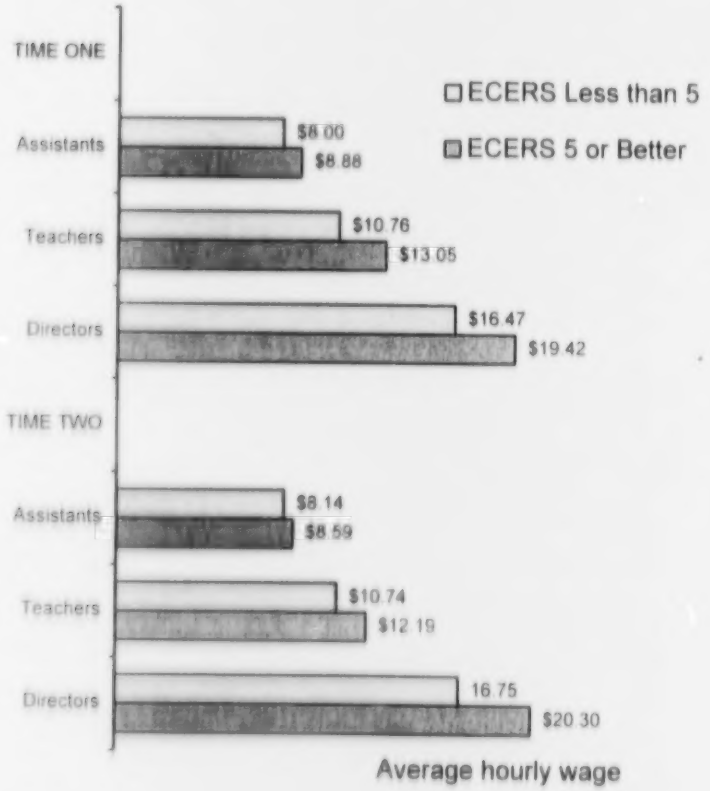
We found that directors and teachers in higher-quality centers were paid higher wages. This held across all centers and within the subgroup of accredited centers. As indicated in Appendix A, Table 3, centers rated high in quality paid significantly higher wages to all employed teachers, teacher-directors, and directors at Time 1 and Time 2. As indicated in Figure 5-7, teachers and directors observed at Time 1 and Time 2 earned significantly more if they worked in centers rated as high in quality. Wages for assistants did not vary significantly based on center quality. Depending on the position, differences in wages ranged from one to several dollars per hour; even a $1.00 per hour differential translates to approximately $2,000 per year. At Time 2, directors in accredited centers rated as high in quality earned, on average, $3.66 per hour more than directors working in accredited centers with lower quality ratings, a differential of over $7,000 per year.

SUMMARY

Our findings confirm the findings of previous studies that nonprofit status, higher-than-average wages and lower rates of staff turnover are associated with high quality in child care services (Helburn, 1995; Whitebook et al., 1990), but point to the continuing need for *all* centers to better address the linguistic needs of young children

[1] Centers pursuing accreditation were more likely to be operated on a nonprofit basis, and had somewhat larger budgets, than centers that were not pursuing accreditation (see Appendix A, Table 2). Among the centers engaged in self-study, those that achieved accreditation were less likely to enroll children receiving public subsidies ($t(41) = 3.01$, $p < .001$).

Figure 5-7 Quality and Average Wages: Observed Teaching Staff and Directors



Note: All wages are reported in 1996 dollars. Source: Month Six of the Consumer Price Index in 1994 and 1996, Bureau of Labor Statistics, United States Department of Labor, Internet Website, http://www.dol.gov

Observed Teachers, Time 1: $F(1, 176) = 7.59$, $p < .01$
Observed Teachers, Time 2: $F(1, 178) = 4.31$, $p < .01$
Observed Assistants, Time 1: Not Significant
Observed Assistants, Time 2: Not Significant
Directors, Time 1: $F(1, 56) = 4.80$, $p < .05$
Directors, Time 2: $F(1, 62) = 4.59$, $p < .05$

and their families. Our findings also reveal considerable strengths as well as certain weaknesses in NAEYC accreditation as a child care quality enhancement process. Achieving accreditation produces observable improvements in the quality of care offered to children, and indicates high-quality care more often than not. Yet a sizable share of accredited centers did not achieve a high level of quality, and centers involved in the self-study process, but not applying for validation, did not show improvements in quality. Centers that seek accreditation by participating in self-study do not necessarily accrue tangible gains: only those going on through the validation process (all but one of which became accredited) exhibited observable increases in quality, suggesting a high degree of self-selection into the final stage of the accreditation process.

It is troubling that a number of NAEYC-accredited centers in this study, as well as in the *Cost, Quality and Child Outcomes in Child Care Centers* study, failed to receive high quality ratings from independent, trained observers. Although there are definite differences between the Early Childhood Environment Rating Scale and the NAEYC Early Childhood Classroom Observation (see Appendix C), these measures assess the same basic dimensions of care. Because our Time 2 visits were scheduled to coincide as closely as possible with the NAEYC validator visits (within three months, on average), it is highly doubtful that the differences in assessment resulted from changes occurring in centers between the time they achieved accreditation and the time they were rated for this study. Finally, the awarding of accreditation status to centers with less than a high rating of quality is not the result of poor judgment by individual validators: seven different validators observed the nine NAEYC-accredited centers in our sample that were rated as mediocre.[2]

Taken as a whole, our findings (combined with similar findings from other studies) suggest that achievement of NAEYC accreditation provides assurance that a center has successfully improved the quality of services it offers to children and families, and that it is likely to exceed the quality of care provided by non-accredited centers. But until the validation process becomes more rigorous, accreditation status will not necessarily guarantee high-quality care. This is particularly true in light of issues of staff stability in accredited centers, which are discussed in the following chapter.

[2] While respecting confidentiality about center ratings, we asked the National Academy to determine whether any of the accredited centers in our study were visited by the same validators. Three of the accredited centers rated as mediocre by our researchers had validators who visited only one center in our sample. Two accredited centers rated as mediocre were visited by validators who each observed one other center rated as good by our research team. Two validators visited the four remaining accredited centers rated as mediocre by our researchers.

FINDINGS: SUSTAINING QUALITY BY RETAINING SKILLED TEACHING STAFF

Chapter 6

Summary: This chapter explores whether seeking or achieving NAEYC accreditation results in greater retention of skilled teaching staff, and examines the impact of turnover on centers seeking accreditation. It also identifies the work place and individual characteristics that distinguish teaching staff of different skill levels who stay at or leave their jobs, and identifies the center characteristics that predict the retention of skilled teaching staff.

OVERVIEW

It is important to determine not only whether NAEYC accreditation results in quality improvements, as discussed in the previous chapter, but also whether centers that achieve accreditation are able to sustain the improvements they have made.

To examine this latter concern, we chose to focus on the issue of stability among skilled teaching staff, widely agreed-upon as an essential component of quality child care services (Helburn, 1995; Whitebook et al., 1990). Moreover, accreditation is an investment in the staff members who are responsible for implementing its many components in the classroom. Some improvements resulting from self-study, such as steps to upgrade the facility and the purchase of new equipment, can be expected to endure beyond changes in personnel, but the quality of the classroom activities and daily interactions experienced by children are unlikely to withstand such changes. This understanding lies behind the National Academy's practice of requiring a re-assessment of accreditation status when a director leaves and/or there is a period of particularly high staff turnover.

Finding Five

All centers in the sample—including accredited centers—had turnover rates for teaching staff that approached or exceeded 50 percent in the 20-month period of the study. Accredited centers were just as likely as others to lose highly-skilled staff and to retain low-skilled staff. Quality did affect turnover, however: centers—whether accredited or not—that retained a greater percentage of highly-skilled teachers were significantly more likely to receive good or better ratings on overall classroom quality. Teachers who remained on the job earned significantly higher wages.

Accreditation does not produce notable reductions in staff turnover. Controlling for time between our first and second observations, turnover rates in all centers achieving accreditation, though absolutely lower, were not significantly different from those for all other centers, as indicated in Figure 6-1. Between our first and second visits, which occurred 20 months apart on average, approximately half of the staff in all centers left their jobs. These findings replicate those of the *Cost, Quality and Child Outcomes in Child Care Centers* study (Helburn, 1995), which found comparable rates of teaching staff turnover in accredited and non-accredited programs.

Some may argue that such turnover in centers that become accredited may be akin to a weeding process, whereby those staff who do not perform adequately are encouraged to leave. But this was not the case. Accredited centers were as likely as other centers to lose highly-skilled teaching staff and to retain low-skilled staff, as indicated in Figure 6-2. Turnover, particularly among highly-skilled and high-background staff, may account for some portion of the mediocre quality ratings found in nearly 40 percent of the accredited programs. For the sample as a whole, centers rated as good to excellent in quality at Time 2 retained significantly more highly-skilled ($t(139) = -2.8$, $p < .01$) and high-background staff ($t(1287) = -9.23$, $p < .0001$). As indicated in Table 6-1, teaching staff who earned higher wages were significantly more likely to remain on the job between Time 1 and Time 2.

Figure 6-1 Time 1 to Time 2 Turnover Rates, All Staff

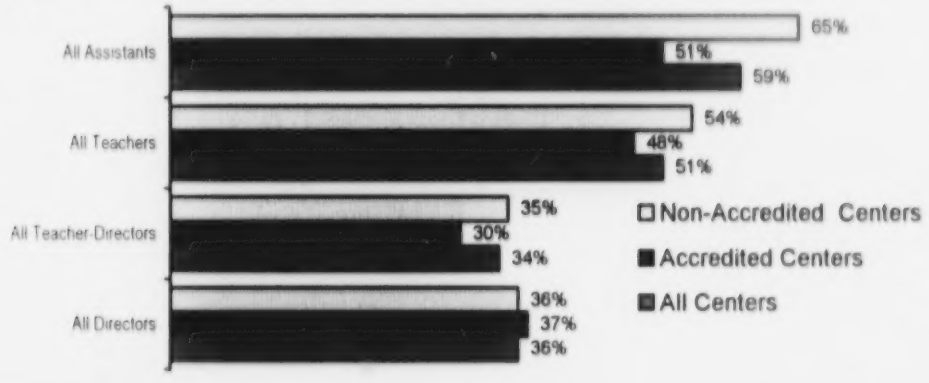
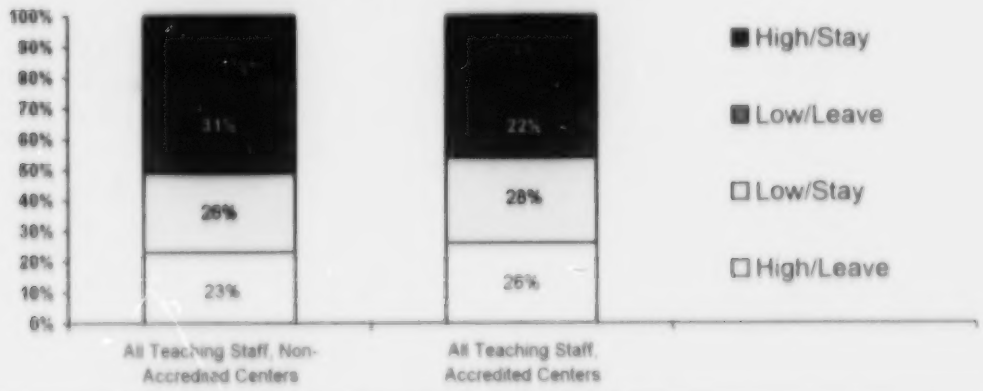


Figure 6-2 Time 1 to Time 2 Turnover and Stability Among Teaching Staff with Different Educational Backgrounds



Finding Six

Centers that achieved accreditation experienced less teaching staff turnover during the self-study process than did other centers participating in self-study that did not become accredited.

High turnover, along with insufficient time, has been identified in interviews with directors as a major reason why centers stall in the self-study phase and do not advance to validation (Talley, 1997). In the present study, among all centers seeking accreditation, Time 1-Time 2 turnover among teaching staff was higher in centers that did not become accredited (63 percent) than in those that were successful (46 percent) (t (58) = 2.58, $p < .01$). Thirty-five percent of teachers had completed four-year college degrees with specialized training in early childhood education (Level 5 backgrounds) in centers seeking but not achieving accreditation, compared to 48 percent in centers that became accredited. This difference approached significance (t (57) = -1.92, $p < .06$), suggesting that it is necessary to have a stable staff—a significant proportion of whom are highly educated and trained—in order to make the improvements and/or to sustain the quality necessary to achieve accreditation.

Table 6-1 Turnover and Wages of Observed Teachers and Teaching Staff*

	Percentage	Mean wage (SD)
Observed Time 1 only	48	$8.96 (2.73)
Oberved Time 1 and 2	52	$11.00 (3.87)
All employed Time 1 only	56	$9.20 (3.16)
All employed Time 1 and 2	44	$11.10 (4.25)

* Includes assistants, teachers, and teacher-directors. Observed teachers t (267) = 5.19, $p < .001$. Employed teaching staff t (730) = 7.41, $p < .001$.

Finding Seven

Skilled teaching staff are more likely to remain at their jobs if they earn higher-than-average wages, work with a higher percentage of well-trained teaching staff, and work in a climate where other well-trained and educated teachers (as well as the director) remain on the job. Highly-skilled teachers, however, are as likely to leave accredited as non-accredited centers.

If accreditation alone does not provide assurance of a more stable teaching staff, what other indicators can help parents and others to identify programs that are more likely to have the consistent, skilled teaching staff so essential to high-quality child care services? We approached this question first by examining different individual and job characteristics that might distinguish between four groups of observed teaching staff: highly-skilled teachers who remained on the job, highly-skilled teachers who left the job, low-skilled teachers who stayed, and low-skilled teachers who left.

We tested a series of variables that have been associated in research with turnover and/or have been hypothesized to influence it. Specifically, we used a series of discriminant function analyses to determine whether wages, benefits, working conditions, center organizational characteristics, work climates, and individual demographic and professional characteristics differentiated group membership for observed teaching staff (see Appendix B for a list of variables tested). Of all these variables, wages, staff background and turnover climate were the only significant predictors identified from the series of discriminant function analyses. These three variables were then selected for another discriminant function analysis, the results of which are reported in Table 6-2.

Highly-skilled teachers were more likely to leave their jobs if they earned lower wages, worked in a climate with less stability of highly-trained co-workers, experienced a change in director, and/or worked with a greater percentage of teaching staff with low backgrounds—defined in this study as less than a bachelor's degree (see Table 6-2). Conversely, highly-skilled teaching staff were more likely to remain on the job if they earned higher wages and worked in a climate where other highly-skilled teachers as well as the director remained on the job. A greater percentage of co-workers with advanced early care and education training also created a climate in which highly-skilled teachers stayed. Highly-skilled teaching staff earned $2.00 per hour more than highly-skilled teachers who left, as indicated in Table 6-2.[1]

The finding that better wages significantly influence whether teachers remain on the job is consistent with previous child care research (Helburn, 1995; Whitebook et al., 1990). This study extends previous research by revealing that the characteristics and stability of the teaching staff as a whole—as well as the job commitment of the director—also influence whether highly-skilled teachers remain on the job. In centers where highly-skilled teaching staff work with other skilled

[1] To test whether the same or similar predictors would discriminate among all teaching staff for whom only background rather than skill data were available, a final discriminant function analysis was performed (see Appendix A, Table 4). Teaching staff with high background levels remained on the job when they were paid higher wages, and worked in an environment with less turnover. The constancy of the director did not predict group membership at this level of analysis.

Table 6-2 Discriminant Function Analysis of Wages, Background Climate and Turnover Climate Variables for Observed Teaching Staff

Predictor Variable	Correlations of Predictor Variables with Discriminant Functions						
	Function 1	Function 2	Univariate F (3,135)	High Skill Stay Mean (SD)	Low Skill Leave Mean (SD)	Low Skill Stay Mean (SD)	High Skill Leave Mean (SD)
Percentage stability positive	.71†	- .10	4.94**	.32 (.22)	.16 (.23)	.25 (.24)	.16 (.13)
Same Director	.68†	.18	4.65**	.86 (.35)	.57 (.51)	.86 (.35)	.60 (.50)
Wages at Time 1	.64†	- .50	6.16***	$12.60 ($3.96)	$9.53 ($2.12)	$10.11 ($3.06)	$10.34 ($3.95)
Percentage low-background staff	- .32	.70†	5.8**	.41 (.26)	.56 (.24)	.63 (.29)	.50 (.21)
Percentage high-background staff	.34	- .47	3.3*	.51 (.27)	.39 (.26)	.35 (.29)	.40 (.23)
Canonical R	.42						
Eigenvalue	.21						

*p < .05 **p < .01 ***p < .001

†Denotes largest absolute correlation between each variable and any discriminant function

teachers, and those teachers remain on the job, they themselves are more likely to stay.

The absence of capable co-workers makes the already challenging job of creating a well-functioning environment for children even harder. Like any team process, it takes time and effort to establish the communication between teachers necessary to create and maintain a smoothly-operating classroom. When other teaching staff leave, particularly those with whom a teacher has worked closely, it deeply affects her day-to-day experience, and ultimately, perhaps, her decision to remain in her current position. The loss of the director—the person who is responsible for establishing and maintaining the tenor and structures that influence a work environment—may also understandably lead other employees to reconsider their own relationship to the job. Multi-faceted benefits can therefore result from paying higher wages: they enable a center to attract individuals who are better-trained, and to create and sustain a staffing pool of higher caliber which itself promotes stability among qualified staff.

Predicting Positive Staffing from Center and Teacher Characteristics

Once we had identified the characteristics that distinguished among teaching staff of different skill and background levels who had remained at or left their jobs, we used multiple regression analyses to test which center and teacher characteristics predict whether a center will maintain a high rate of

highly-skilled teaching staff (see Appendix A, Tables 5 and 6).

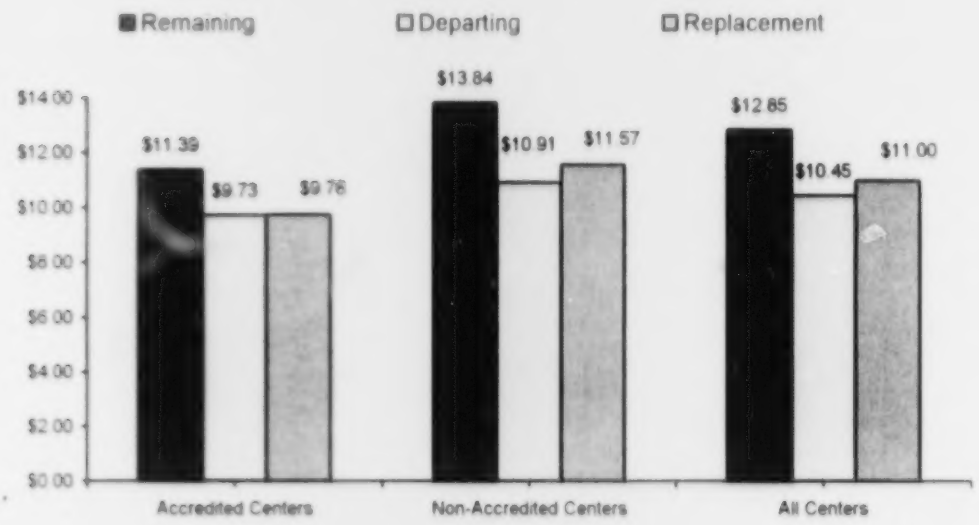
Reinforcing the discriminant function analyses, higher wages and a greater proportion of high-background teachers who remain on the job predicted positive staffing in centers for all teaching staff and observed lead teachers. Better-paid teaching staff with high skill levels were more likely to remain on the job if their well-trained co-workers also stayed. To a lesser extent, the proportion of teachers with high levels of formal early childhood education and training also predicted turnover or stability. Accreditation status, however, did not predict positive staffing.

Finding Eight

In accredited and non-accredited centers alike, highly-trained teaching staff who left their jobs and highly-trained replacement staff earned considerably less than their colleagues who remained on the job between Time 1 and Time 2, suggesting that turnover among highly-trained teachers will continue unabated.

Highly-educated and trained teaching staff with similar qualifications, hired to replace highly-educated and trained staff who have left their jobs, received compensation comparable to that of their predecessors, as

Figure 6-3 Highly Skilled Staff: Remaining, Departing, and Replacement, by Wage



indicated in Figure 6-3. Accredited centers determining staff stability, it is unlikely that highly-educated and trained replacement staff will remain long on the job. Based on these findings, it therefore appears likely that high levels of turnover among teaching staff in accredited and non-accredited centers will continue.

DISCUSSION

Wages are central in retaining skilled teachers. In this study, highly-skilled teaching staff who remained on the job earned on average $2.00 or more per hour than highly-skilled teachers who left. But our understanding of the importance of wages is extended by these findings: higher wages not only help to attract and retain qualified staff, they also create an environment in which qualified staff are able to work with well-trained colleagues who, as a team, establish a rewarding work environment and a stable caregiving situation for children. This is true for accredited as well as non-accredited centers.

While these findings make intuitive sense—in any work place, most people would prefer to have skilled and consistent co-workers—they are important because they challenge the soundness of current trends and proposals for staffing child care centers. Many states, for example, are considering or have established programs to employ former welfare recipients as child care workers without providing them with pre-service or ongoing training. In addition, many child care businesses staff center classrooms with only one well-trained teacher working with minimally-trained assistants, and these centers report the highest rates of staff turnover (Whitebook et al., 1990).

In this study, we found that personal characteristics such as marital status, number of children and household income (see Appendix B) did not discriminate among teaching staff of different skill levels who left their jobs. This finding challenges strongly-held beliefs in the child care field that attribute turnover to the personal characteristics or circumstances of the teacher who has left—whether to get married or to have a baby, or because she has a second job—rather than to the characteristics of the job and the work environment.[2]

These findings also challenge notions about the importance of other benefits and working conditions in comparison to wages. Many argue that the emphasis on wages is exaggerated, suggesting that it is other aspects of the job—such as being able to bring one's children to work, or the availability of training opportunities—that most encourage people to remain. While these components of the job may contribute to overall satisfaction, wages provide the most telling information about whether teaching staff of different skill levels will remain on the job. This is particularly interesting in light of the relatively high wages paid to teaching staff in this sample, compared to the average national child care wage, which is approximately $2.00-3.00 per hour lower. Analyzed in the context of the high average level of education among teaching staff in this sample and the high cost of living in the target communities, these results suggest that a good child care wage must be calculated and interpreted locally. They also underscore the depressed wage levels for child care jobs; the "foregone

[2] The high level of education and training among teaching staff in our sample may have influenced these findings; further research testing these relationships among a more diverse grouping of teaching staff could help to clarify this issue.

wage" (representing the additional pay one might earn in another field for comparable work) is estimated at over $5,000 per year per teaching staff member (Helburn, 1995). While they are important, other aspects of the work environment may pale in light of economic needs. These financial constraints affect accredited and non-accredited centers alike.

While achieving NAEYC accreditation does help centers to improve their services, the findings reported here suggest that it falls short as a strategy for ensuring high quality and maintaining a skilled early care and education work force. The failure of many accredited centers to retain a greater proportion of highly-skilled teachers than other centers is not surprising, given the relationship between wages and retention, and the minimal emphasis placed on improving compensation or reducing turnover in the NAEYC self-study process.

Compensation guidelines for early childhood programs, calling for comparable salaries based on education and training across settings and age groups, are included in the NAEYC self-study materials. It is implied that teaching staff working with preschool-age children in child care centers should earn the same amount as an elementary school teacher with similar qualifications. Child care centers' compliance with these criteria are not rated, however, and the guidelines include a disclaimer acknowledging that "some early childhood programs will require additional resources before these guidelines can be fully implemented" (NAEYC, 1991; p. 67, Appendix B). Although the guidelines state that "immediate steps...can and must be taken" (NAEYC, 1991; p. 67, Appendix B), these steps are left unspecified. The staff stability criterion does not establish a level of turnover judged to be incompatible with accreditation status, but only endorses in general terms the importance of stability among teaching staff: "Every attempt is made to have continuity of adults who work with children, particularly infants and toddlers" (NAEYC, 1991). Many programs may be hard pressed to know how to improve retention, and the standards for compliance with this criterion are unclear. If an accredited program reports a high level of turnover when it submits its annual review, an on-site verification by the Academy may be required to maintain accreditation status, but it does not appear to be clear among center directors what level of turnover would prompt such a visit.

SUMMARY

This study's findings add to the mounting evidence that the level of wages in child care, as in other industries, plays a critical role in determining the stability and qualifications of the work force. To maximize the investment in helping centers become accredited, and to ensure that accredited centers reach and sustain a high standard of care, it will be necessary to devote focused attention to staff compensation and stability as criteria for accreditation, as well as greater investment in the people who create and deliver quality services.

FINDINGS: WHAT CENTERS NEED TO SUCCEED AT ACCREDITATION

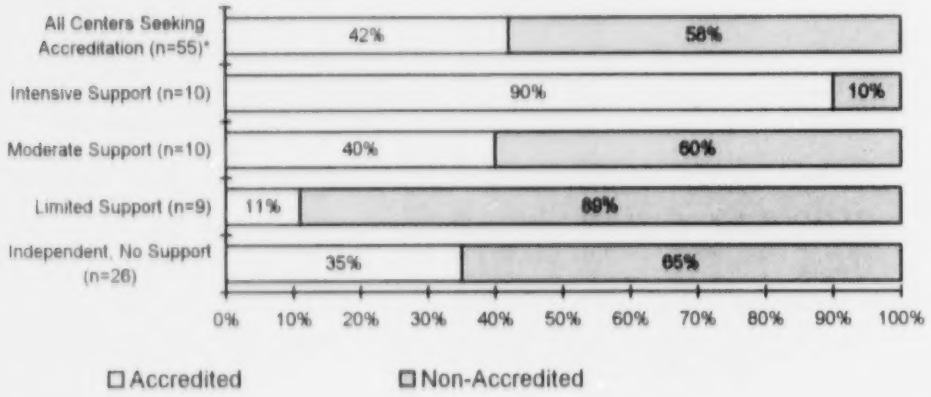
Chapter 7

Summary: This chapter focuses exclusively on centers seeking accreditation, and explores how different levels of support received during the self-study process influence centers' success in becoming accredited.

OVERVIEW

Our study included centers that were seeking accreditation with varying levels of support, as summarized in Figure 7-1. One group of centers pursued accreditation independently and did not participate in a support project. The other three groups of centers participated in one of three support groups, characterized by limited, moderate or high intensity. The high-intensity group received a wide range of services, including technical assistance from an early childhood expert assigned full-time to work with these centers, training designed to meet the self-identified needs of teaching staff and directors, payment to cover release time costs for teaching staff participating in the training, and a facilitated director support group. Centers in the moderate-intensity group received technical assistance, training and facilitated support on a more limited basis. Release-time costs were not covered, but funds for new equipment (approximately $750 per center, on average) were available. The limited-intensity group held occasional meetings for directors only, and provided some funds for equipment and NAEYC accreditation fees. Rates of accreditation for the different groups are also summarized in Figure 7-1.

Figure 7-1 Accreditation Rates for Centers Receiving Different Levels of Support



*$\chi^2(3) = 13.60$, $p < .01$

Finding Nine

Centers receiving intensive support—including on-site technical assistance from an early childhood professional, custom-designed training for staff and directors, funds to cover release time for staff participating in training, and an ongoing facilitated support group for directors—achieve accreditation at more than twice the rate of centers receiving moderate support or seeking accreditation independently, and at nearly ten times the rate of centers in a limited support group.

Because of the widespread interest among government, corporate, labor and foundation funders in supporting centers in the accreditation process, we used logistic regression analysis to explore whether different levels of intervention or support increase the likelihood of achieving accreditation. We found that centers receiving intensive support were more likely than those receiving moderate or limited support to become accredited, and those receiving moderate support were more likely to become accredited than those receiving limited support (see Table 7- 1). Centers not participating in a support group achieved accreditation at nearly the same rate as centers receiving moderate support, and only one center out of 10 in the limited support group achieved accreditation (see Figure 7-1).

To examine the extent to which these differences in accreditation rates could result from differing characteristics of the centers in each of the groups, we explored whether centers in the high-intensity group began the self-study process with higher levels of

Table 7-1 Logistic Regression Predicting Accreditation Status from Intensity of Support

Predictor Variables	Final B	R	Wald
Intervention			
Intensive	3.42	.34	4.92***
Moderate	1.50	.15	3.85*
Limited	- .49	.00	.20

$\chi^2(3) = 24.71$, $p < .01$; 39% correct prediction.

*$p < .05$. *** $p < .001$.

quality or staff stability. We found that at Time 1, there were no significant differences in observed classroom quality (see Table 7-2), adult-child ratios or teaching staff interactions (see Appendix A, Table 7) among centers seeking accreditation with different levels of support, nor were there significant differences with respect to teaching staff and director background, or teacher tenure on the job or in the field.

Centers also did not differ with respect to positive staffing; skilled teaching staff were no more likely to stay on the job between Time 1 and Time 2 at centers with different levels of support. However, when all teaching staff are considered, and differences in length of time between visits are controlled, there were significant differences in Time 1-Time 2 turnover: teaching staff working in centers receiving limited support or seeking accreditation independently were more likely to leave their jobs between the first and second visits than those working in centers receiving moderate or high support ($\chi^2(3) = 8.79$, $p < .05$).

There were no differences among the four groups of centers with respect to auspices, hours of operation, or number of children enrolled. Location in different income areas approached significance ($\chi^2(6) = 11.42$, $p < .08$). Fifty percent of centers receiving high-intensity support were located in low-income areas, compared to 27 percent of those pursuing accreditation independently, 22 percent receiving limited support, and no centers receiving moderate support.

Centers receiving limited support differed from other centers along several dimensions relating to budget and staffing priorities. These centers dedicated a smaller percentage of their budgets (44 percent) to teaching staff expenditures at Time 1 than did centers in all other groups: (intensive = 59 percent, moderate = 73 percent, none = 60 percent) ($F(2, 43) = 4.72$, $p < .01$). Centers receiving limited support were less likely to offer teachers and assistants paid sick days than all other centers seeking accreditation, and were also less likely to offer paid vacation time to teachers than centers seeking accreditation with moderate or no support. (see Appendix A, Table 8). In addition, teaching staff in centers receiving limited support were less likely to enjoy a number of positive working conditions, such as paid breaks, written grievance procedures and paid training opportunities (see Appendix A, Table 8).

Table 7-2 Classroom Quality Scores (ECERS) by Intensity of Support

		Time One		Time Two		
	N	ECERS M(SD)	Range	ECERS M(SD	Range	Change Score
Intensive	10	4.34 (.86)	3.19-5.62	5.20 (.71)	3.93-6.41	.86 (.79)
Moderate	10	4.43 (.58)	3.67-5.46	4.87 (.81)	3.62-5.95	.44 (.70)
Limited	9	4.13 (.62)	3.35-5.20	4.22 (.63)	3.30-5.16	.09 (.63)
Independent	26	4.65 (.71)	3.61-6.24	4.68 (.91)	3.35-6.74	.03 (.72)
Non-seeking centers	37	4.12 (.68)	2.89-5.39	3.99 (.83)	2.42-6.28	-.13 (.70)

Interviews with support group coordinators provided an additional perspective on differences among the communities in which the centers operate. The child care community in which the high-intensity group was located was relatively well-organized prior to the inception of the support group; many of the directors had been meeting previously, and they had helped design the support project and identify the services they believed were necessary for achieving accreditation. The community of the moderate-intensity group was not as highly organized, but many of the directors had previously worked with the agency sponsoring the support group. This agency also had previous experience with already-accredited centers in the community, and there was a high degree of consensus in the child care community about wishing to increase the number of NAEYC-accredited centers. Centers participating in the limited support group had no prior history of working as a group; they came together in response to an invitation extended to centers serving children of employees of the project's sponsor.

Taken together, the findings reported here suggest that centers may require not only a certain level of support to achieve accreditation and improve quality, but also must demonstrate certain readiness criteria, such as a certain level of commitment to staff expenditures, working conditions and benefits, an average or lower staff turnover rate, and some degree of community cohesion and networking. Given that centers that seek but do not succeed at accreditation demonstrate no improvement in quality, it may be that accreditation is too ambitious a goal for some centers, at least initially. A pre-self-study support group may be the more appropriate first step for many centers interested in enhancing their quality of care, but not yet ready to undertake the self-study process.

Finding Ten

Centers participating in a high- or moderate-intensity support group were more likely to improve in quality than centers participating in a limited support group or receiving no support. Only participation in a high-intensity support group, however, increased the likelihood of a center achieving a quality rating of good or better.

Changes in classroom quality ratings, adult-child ratios and teacher behaviors for

Table 7-3 Multiple Regression Predicting Change in Quality by Intensity of Support

Predictor Variables	Final B	SR^2	t
Intervention Intensity			
Intensive	.34	.31	3.37**
Moderate	.22	.18	2.18*
Limited	.02	.07	.75

$F(6,85) = 3.23$, $p < .01$; $r = .43$; $R^2 = .19$.

* $p < .05$. ** $p < .01$.

centers seeking accreditation with different levels of support are reported in Table 7-2 and Appendix A, Table 7. Using multiple regression techniques, we found that different levels of support predicted differing degrees of improvement in quality as measured by the ECERS (see Table 7-3); i.e., the more intensive the support, the greater the improvements in quality. Centers participating in the intensive group improved at twice the rate of centers in the moderate-intensity group. Those in the limited-intensity group and independent groups demonstrated almost no improvement. Improvements in teacher behaviors were also associated with intensity of support. At Time 2, teachers in centers seeking accreditation with a high level of support were rated as more sensitive than staff working in centers receiving limited or no support, and were rated as less detached than those in centers receiving no support. Teaching staff in centers receiving moderate support were also rated as less detached than their counterparts in limited and no support groups (see Appendix A, Table 7).

We used logistic regression analysis to determine whether different levels of intervention intensity increase the likelihood of centers achieving ECERS ratings of 5 or greater. As indicated in Table 7-4, only centers participating in the intensive support group were more likely to achieve good (or better) classroom quality ratings. Figure 7-2 (page 63) provides information about the proportion of centers in each of the four groups that achieved high-quality classroom ratings.

DISCUSSION

Centers that received the greatest investment of support put it to good use. They achieved accreditation and improved their level of quality at far greater rates than did centers receiving less or no support from outside sources. In this case, a lot of support went a long way, but a little support was not money well spent.

Funds for the support groups came from a variety of sources. One was funded exclusively by a private foundation, another by a consortium of business and private funders and in-kind services from a city agency, and a third by a grant from businesses. Funds expended by the support groups, which served about the same number of centers, ranged from approximately

Table 7-4 Logistic Regression Predicting ECERS Scores of 5 and Above from Intensity of Support

Predictor Variables	Final B	R	Wald
Intervention			
Intensive	1.54	16	4.79*
Moderate	1.33	10	3.09
Limited	- .83	00	.57

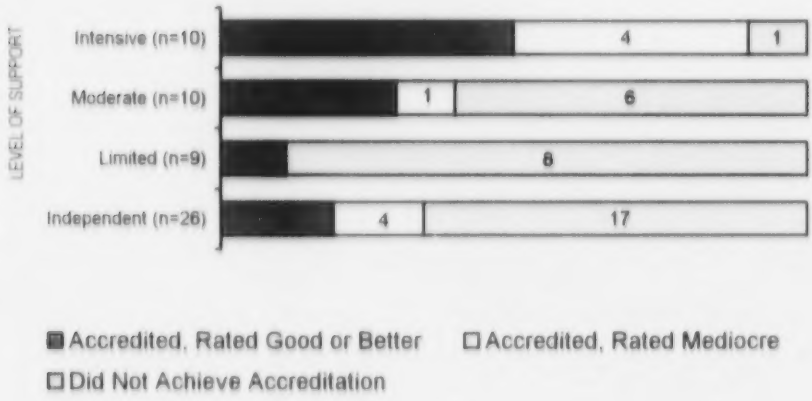
*$\chi^2(5) = 11.80$, $p = .03$, 13% correct prediction

$100,000 for the high-intensity group, to approximately $35,000 for the moderate-intensity group, to $10,000 for the limited-intensity group. In the high-intensity group, approximately two-fifths of the grant covered staffing costs related to training and release time. Although the intensive support required a far greater up-front investment, the return on the investment was exceptionally high. In contrast, limited support produced almost no return. Reports from other studies bear out the suggestion that limited support may be a flawed strategy (Goldfarb and Flis, 1996). It is more difficult to assess the efficacy of the moderate support group. While some of these centers may have achieved accreditation successfully on their own, the centers seeking accreditation independently did not make gains in quality, and those in the moderate support group did.

The accreditation process therefore pays off for child care centers in terms of improved quality if and only if accreditation is achieved. Regardless of the outcome, it is generally agreed that the accreditation process requires considerable time and commitment from directors and teaching staff who are already stretched by the demands of their jobs. Seeking accreditation also consumes a center's financial resources. While the Academy charges centers a fixed amount based on center size, the direct expenses incurred during the self-study process vary among individual centers. Some require a substantial outlay for equipment or renovation. Depending on staff background levels, centers' training costs will also vary a great deal. Costs involving staff and director time to process and complete the self-study materials vary among centers, and centers also make differing decisions about whether to compensate staff for their additional time and effort.

In our study, centers seeking accreditation independently bore the costs associated with the process by using existing center resources. Centers participating in the support groups also incurred costs, but, depending on the intensity of support, a great deal to a minimal amount of the direct costs were covered by the group. Almost all of the teaching staff and directors responding to our survey, however, expressed the need for more time and greater financial resources to pursue accreditation, mirroring feedback from other surveys of participants in the self-study process (Talley, 1997; Goldfarb and Flis, 1996).

Figure 7-2 Quality Ratings at Time 2 for Centers Receiving Different Intensity of Accreditation Support



In the child care profession, where there are so many demands on such limited resources, spreading the resources thinly may appear to be the most equitable and sensible approach. But in reality, such minimal investments often produce no gains, or lead only to improvements that are difficult to sustain. In particular, the profession has had a difficult time learning the lesson that training dollars yield a poor return on the investment when insufficient attention is paid to advancement opportunities and retention for teachers and providers. As a result, the field continues year after year to spend public and private funds to help caregivers build their skills, but when caregivers fail to receive opportunities to advance, many promptly leave for jobs in other fields that will offer better pay and greater recognition (Whitebook & Sakai, 1995).

We run the risk, as a community, of pursuing accreditation in a similar fashion. As with training for individual caregivers, accreditation is a valued goal for child care organizations. But accreditation alone cannot be expected to address the underlying issues of insufficient resources that undermine the quality of child care services. Quality enhancement, through accreditation or other means, requires a significant and sustained investment in the organizations and people that provide child care services. To the extent that we limit this investment, we ultimately shortchange the children and families who rely on child care daily.

CONCLUSION AND RECOMMENDATIONS

Chapter 8

The persistent crisis in child care quality and its detrimental consequences for children have been well documented (Phillips et al., 1996; Helburn, 1995; Whitebook et al., 1990). At the heart of this crisis lies the insufficiency of resources to attract and retain a work force able to create and sustain developmentally appropriate environments for children (Bellm, 1994). Many approaches to addressing this problem have been proposed and tried, but accreditation of centers by the National Association for the Education of Young Children (NAEYC) has garnered the lion's share of resources directed toward improving child care quality in the United States. For this reason, the present study has sought to examine the effectiveness of NAEYC accreditation in assuring child care quality and stabilizing child care staffing.

The findings reported here suggest that while achieving NAEYC accreditation does help centers to improve their services, with a majority of accredited centers reaching a high level of quality, it falls short as a strategy for guaranteeing high-quality care, and accreditation alone does not guarantee the maintenance of a skilled early care and education work force.

While the centers that achieved accreditation improved in quality between the first and second observations, nearly 40 percent of them continued to be rated as mediocre. Teaching staff turnover in accredited centers was not significantly lower than in centers that failed to achieve or did not seek accreditation, and accredited centers were no more likely to retain their most skilled teaching staff than were other centers in the community. These findings replicate those of the *Cost, Quality and Child Outcomes in Child Care Centers* study (Helburn, 1995), which found over half of accredited centers to be rated as mediocre in quality and reported comparable rates of teaching staff turnover in accredited and non-accredited programs.

Taken together, these findings suggest that the limitations of NAEYC accreditation as a quality improvement strategy may be structural, reflecting weaknesses in the validation system and/or in the accreditation criteria—in particular, a lack of focus in the criteria on staffing issues. This is not to argue against centers engaging in the NAEYC accreditation self-study process. The results of this study show that centers that achieved accreditation improved the caliber of services they provide to children

and families, especially when they participated in intensive accreditation support projects. Centers that received intensive support achieved the greatest gains in quality, and were also the most likely to become accredited. Still, many accredited centers fell short of a high standard of care. And among the centers that engaged in self-study but did not achieve accreditation, quality did not improve at all, which raises concerns about the soundness of investment in accreditation for all programs, particularly if only limited support is made available to them. Centers that failed to achieve accreditation also experienced higher rates of turnover between observations, although their initial levels of tenure were not different from centers that achieved accreditation.

If, as it now operates, NAEYC accreditation status alone cannot guarantee sustainable high-quality services, what other center characteristics contribute to good care? Centers rated good or better in quality in our study retained significantly more highly-skilled teaching staff. Better-than-average compensation emerged as central to retention: highly-skilled teaching staff who remained on the job earned on average at least $2.00 per hour more than highly-skilled teachers who left. Among low-skilled teachers, the differential between those who stayed and left was smaller—approximately $1.00 per hour. Highly-skilled teaching staff who left the job earned only slightly more than low-skilled teaching staff who remained. This study also identified two compensation-related aspects of the work environment which contributed to better retention: the turnover climate, defined as the proportion of teaching staff of different skill and background levels who leave, and the background climate, defined as the proportion of high- or low-background teachers on staff. Just as a climate of high turnover tends to beget more turnover, the same is true of retention: centers with a greater proportion of highly-skilled teachers on staff were also more likely to retain them.

NAEYC accreditation can make an important contribution to centers attempting to enhance their services, but making quality improvements that are sustainable over time will also require systematically addressing the compensation of child care staff. In turn, improving compensation will necessitate large-scale public education and advocacy to secure greater financial resources for child care services, and to ease the over-reliance of the U.S. child care system on parent fees. The alternative is continued mediocre care, with intolerably high levels of staff turnover, at a time in children's lives when skillful, consistent caregiving makes a crucial and lasting contribution to healthy development.

More immediately, we offer the following recommendations for action by all who are concerned about the quality of child care services in the United States, and who are eager to strengthen the NAEYC accreditation process as a quality improvement strategy.

NAEYC ACCREDITATION

- **Ensure that accredited centers reflect a high standard of care.** Nearly 40 percent of the centers in this study which became accredited were rated as mediocre in quality on the Early Childhood Environment Rating Scale (ECERS), a widely-used and respected measure that is linked to child outcomes and is closely related to the NAEYC accreditation criteria. Since it is not fully clear from this study where in the process the causes of this shortfall in

quality lie, we encourage NAEYC to undertake a re-examination of its accreditation criteria and of its validation and Commission approval systems.

- **Strengthen the accreditation criteria on staff stability, and create a standard for compliance**. This study found that accredited centers were no more successful than others at retaining their highly-skilled and qualified staff. As part of the self-study process, all centers should develop a staff retention plan, and information about the tenure of employed staff and their educational background should be considered in validating and re-validating centers. NAEYC's National Academy of Early Childhood Programs should also establish a clear cut-off point, in terms of staff turnover rates, at which centers would need to be re-validated.

- **Strengthen the NAEYC accreditation criteria related to compensation.** While the NAEYC accreditation criteria call for wages that are comparable with other professional education-related jobs in the community, they are lenient about requiring specific improvements. Although NAEYC may not be able to set forth specific salary and benefits guidelines, the criteria should require centers seeking accreditation to develop a concrete plan, with an implementation timetable, for improving staff compensation.

- **Develop criteria to insure that accredited programs meet the linguistic needs of all children and families.** Accredited centers should be encouraged to hire and retain staff who speak the home languages of all children in the center. If centers cannot find staff with these linguistic skills, other plans to address the linguistic needs of families (e.g., regular conferences between center staff and family members, with a translator) should be developed.

- **Develop guidelines for accreditation "readiness" to help centers assess whether they are likely to succeed at accreditation.** The great investment of energy in the self-study process may create pressure on the National Academy and/or validators to confer accreditation status on programs whether or not they have achieved high quality. Guidelines from NAEYC about the conditions for and barriers to success in securing accreditation may help centers not likely to gain accreditation to engage in more appropriate and fruitful "pre-accreditation" quality enhancement activities.

PUBLIC AND PRIVATE FUNDERS OF CHILD CARE QUALITY ENHANCEMENT INITIATIVES

- **Invest in accreditation support projects that provide comprehensive services to centers.** Projects that include on-site technical assistance, training that is targeted to staff members' self-identified needs, release time for staff to participate in training, and support for directors result in greater accreditation success rates. Minimal investment in accreditation support may encourage centers to engage in the self-study process and fail, which can demoralize staff and exacerbate turnover.

- **Support projects and policies that address the retention of qualified**

child care teaching staff. We encourage funders to develop and support initiatives that link compensation and training and that create decent jobs in the child care field. (For a comprehensive description of such initiatives, see the 1997 publication by NCECW, *Making Work Pay in the Child Care Industry*.) The public reimbursement rate differential that accredited programs now receive in some states, for example, should be targeted specifically to staff salaries. Wage rates should also be linked to staff background levels and the fulfillment of continuing education requirements.

- **Devote concentrated attention to refinancing the child care system at the federal and state level.** The problems plaguing the child care system require additional sources of revenue. We encourage funders and policy makers to initiate and/or support ongoing efforts to expand resources for child care.

CHILD CARE RESOURCE AND REFERRAL AGENCIES

- **Encourage consumers to seek information about staff background and stability when considering which program to choose for their children.** Our findings show that several other factors, in combination with accreditation status, are critical predictors of quality that parents should also take into strong consideration when choosing child care—most notably, nonprofit status, higher-than-average staff wages, and low staff turnover.

- **Continue to urge parents to visit programs when choosing child care, rather than relying exclusively on information about accreditation status.** Because thousands of child care centers in the United States now use NAEYC accreditation status as a key element of marketing their programs to parents, many consumers may now have an inflated sense of security about the quality of care they are purchasing. This study's findings indicate that while NAEYC accreditation more often than not is a sign of good quality, accreditation status alone is not a sufficient guarantee of high-quality child care services.

- **Develop training efforts and accreditation support projects that link training and compensation.** As major brokers of child care quality enhancement and training dollars in their communities, child care resource and referral agencies should devote increased attention to linking training and compensation in order to promote the retention of well-trained, highly-skilled child care teachers and providers.

TEACHERS

- **Ask your prospective and current employers, including accredited centers, what they are doing to improve wages and adult work environments, and how you can become involved.** Highly-skilled teachers are more likely to stay on the job when they are well-compensated and when they are working with other skilled and consistent staff.

- **Join with other teachers working to improve compensation and reduce turnover.** In order to change current

conditions that keep many qualified teachers from remaining in the child care field, it is critical for teachers themselves to challenge the low wages and high turnover that undermine the consistency and quality of care that young children receive.

DIRECTORS

- **Engage in a realistic assessment of your program's readiness, in partnership with teaching staff, before undertaking NAEYC accreditation self-study.** NAEYC's National Academy of Early Childhood Programs can provide a list of the centers in each state that are accredited or engaged in self-study. We encourage directors to learn from these centers firsthand about what is involved in the self-study process, and to discuss with staff the kinds of support they need in order to undertake the process successfully.
- **Share information with parents about the background, teaching philosophy and longevity of your teaching staff, and about what you are doing to recruit and retain qualified teachers.** At the same time, directors should share information with parents about the economic constraints that all child care centers face, and ask parents to join as advocates in finding solutions.
- **Join with other directors working to improve compensation and reduce turnover.** More and more directors are working together, and with teachers, to learn how to improve child care jobs.

PARENTS

- **Ask about staff background and stability when choosing a child care program for your child.** Because of the difficulty of securing accurate turnover and wage information, it may be most helpful for parents, when visiting child care programs, to ask for a profile of teaching staff background and tenure in order to learn about these issues.
- **View NAEYC accreditation as a sign that a program seeks to offer the best-quality care, but not as a guarantee of excellence.** Although NAEYC-accredited programs are more likely to be high in quality, a large minority of accredited centers were found in this study to continue to offer mediocre care, and many have difficulty sustaining their gains in quality because of high staff turnover. There is no substitute for visiting programs, and learning about the components of high-quality child care.
- **Become involved in efforts to expand support for child care for all families.** Parents can speak with directors or teachers about becoming involved in public policy advocacy for high-quality, affordable child care services. We also encourage parents to talk with their employers about the need for more resources for child care.

APPENDIX A

Additional Tables

Table 1 Comparison of Characteristics Among Centers that Refused or Had Closed at Time 2 and Centers that Participated at Time 1 and Time 2

Characteristics	Closed or Refused[a]	Final Sample, Time 1[b]	t tests/ Chi-Square
Number of children enrolled			
M	46	72	3.72***
SD	70	67	
Director wages			
M	$11.63	$15.62	5.10***
SD	$1.87	$4.87	
Observed teacher wages			
M	$8.04	$10.37	1.95*
SD	$1.12	$3.53	
Director report of annual % turnover			
M	.51	.22	3.50***
SD	.38	.24	
Teachers with some college and minimal training	67%	51%	1.53
Teachers with college degrees & ECE training	29%	43%	- 1.81
ECERS score			
M	4.18	4.32	.77
SD	.82	.71	
ECERS > 5	20%	16%	.09

[a]N = 10. [b]N = 92.

*p < .05. ***p < .001.

Table 2 **Comparison of Characteristics Among Centers Achieving, Seeking, and Not Seeking Accreditation**

Characteristic		Accredited[a]	Seeking, Not Yet Validated[b]	Not Seeking Accreditation[c]	F/ Chi-Square
% For profit		26	9	41	8.64**
Overall budget Time 1	n	23	28	34	3.51*
	M	$381,603	$358,965	$187,833	accredited > not seeking
	SD	$282,222	$446,292	$143,162	
	Range	$ 34,000-1,074,012	$ 65,000-2,035,857	$ 18,000-547,874	
Overall budget Time 2	n	23	31	34	3.03*
	M	$350,810	$416,344	$194,332	accredited > not seeking
	SD	$276,403	$561,662	$143,351	
	Range	$ 38,000-1,139,000	$ 32,670-2,800,000	$ 29,643-528,783	

[a] n = 23 [b] n = 32 [c] n = 37

*p < .05 **p < .01

Table 3 Quality and Wages: All Teaching Staff

	Time One			Time Two		
	N	M(SD)	Range	N	M(SD)	Range
All Teachers						
ECERS <5	338	$10.56($3.12)	$4.88-25.14	411	$10.03($2.83)	$5.00-23.00
ECERS ≥5	146	$11.51($3.90)	$7.34-30.94	140	$11.68($4.83)	$7.00-38.73
F		6.18*			22.66**	
All Assistants						
ECERS <5	189	$7.82($1.59)	$5.24-14.26	142	$7.69($1.81)	$5.00-21.95
ECERS ≥5	40	$7.66($1.54)	$5.24-11.32	48	$8.24($1.60)	$5.92-12.00
F		not significant			not significant	
All Teacher-Directors						
ECERS <5	41	$14.14($4.23)	$6.21-25.45	41	$12.92($2.70)	$8.25-20.25
ECERS ≥5	10	$15.50($4.84)	$9.44-22.02	12	$15.52($3.63)	$10.04-21.00
F		not significant			8.54**	

*p < .05 **p < .01 *** p < .001

* Note: All wages are reported in 1996 dollars. Source: Month Six of the Consumer Price Index in 1994 and 1996, Bureau of Labor Statistics, United States Department of Labor, Internet Website, http://www.dol.gov.

Table 4 Discriminant Function Analysis of Wages and Turnover Climate Variables for All Teaching Staff

Predictor Variable	Correlations of Predictor Variables with Discriminant Functions: Function 1	Function 2	Univariate F (3,800)	High Background Stay Mean (SD)	Low Background Leave Mean (SD)	Low Background Stay Mean (SD)	High Background Leave Mean (SD)
Wages at Time 1	.77†	.63	61.2***	$12.85 ($4.44)	$8.22 ($2.00)	$9.51 ($3.25)	$10.45 ($3.97)
Percentage turnover for all staff	.74†	.67	59.0***	.42(.20)	.62(.19)	.43(.20)	.59(.20)
Same director	.32	-.25	11.0	.82 (.38)	.63 (.48)	.76 (.43)	.61 (.49)
Canonical R	.49						
Eigenvalue	.31						

***p < .001

†Denotes largest absolute correlation between each variable and any discriminant function.

Table 5 Multiple Regressions Predicting Positive Staffing at Time 2 for Observed Teachers

Predictor Variables: Indirect Paths	R	R^2	Final β	sr^2
Auspices	.28*	.08	.26	.27
Intensity of support	.35	.12	.12	.11
Accreditation			-.21	.09
Change in quality			.14	.09
Auspices	.18*	.03	.13	.13
Staff wages	.32*	.10	.24*	.24
Director wages			-.06	.05
Staff background			-.06	.06
Background climate			.11	.18
Quality Time 1			-.001	.08
Auspices	.26*	.07	.18	.17
Staff wages Time 1	.36*	.13	.26*	.25
Director wages Time 1			.001	.13
Turnover climate			-.008	.11
Change in ECERS 1-2			-.03	.03
Predictor Variables: Direct Paths	**R**	**R^2**	**Final β**	**sr^2**
Auspices	.18*	.03	.13	.13
Staff wages	.30**	.09	.24**	.24
Auspices	.20*	.04	.17*	.17
Turnover climate (percent positive stability)	.30**	.09	.23**	.23
Auspices	.19*	.04	.17	.17
Background climate (percentage high background teaching staff at Time 1)	.25*	.06	.17*	.17

*$p < .05$. **$p < .01$.

Note: Turnover climate at this level of analysis is defined as the percentage of teaching staff with high educational backgrounds who stayed on the job between the two visits.

Table 6 Multiple Regressions Predicting Positive Staffing at Time 2 for All Teaching Staff[1]

Predictor Variables: Indirect Paths	R	R^2	Final β	sr^2
Auspices	.05	.002	.04	.04
Center			- .15	- .07
Change in ECERS 1-2	.10	.01	.07	.04
Accreditation			- .003	.005
Intensity of support			- .18	- .07
Auspices	.05	.003	.04	.04
Staff wages Time 1	.16**	.03	.14***	.14
Director wages Time 1			.04	.07
ECERS Time 1			- .04	.00
Auspices	.05	.003	.03	.03
Center			.04	.04
Staff wages	.21***	.04	.12**	.14
Turnover Time 1-2[2]			- .10*	- .15
Same Director[2]			.08*	.12
Director wages			- .02	.07
Change in ECERS 1-2			- .02	.04
Predictor Variables: Direct Paths	**R**	**R^2**	**Final β**	**sr^2**
Auspices	.06	.003	.04	.04
Center			- .01	- .001
Wage Time 1	.15***	.02	.14***	.11
Auspices	.05	.00	.03	.03
Center			.006	.005
Turnover all staff Time 1-2	.16***	.03	- .15***	- .15

**$p < .01$ ***$p < .001$

[1] The direct path between background climate and positive staffing was not tested at this level of analysis because background of teaching staff is a composite of the positive staffing variable.

[2] Turnover climate at this level of analysis is defined by turnover rate between Time 1 and Time 2 and whether the director stayed on the job between the two visits.

Table 7 Comparison of Teacher-Child Interaction Among Centers Seeking Accreditation with Different Intensity of Support

Quality Measure	None[a]	Limited[b]	Moderate[c]	Intensive[d]	F
Sensitivity Time 1					
M	2.91	3.09	3.01	3.26	1.09
SD	.58	.26	.49	.67	
Range	1.63-3.80	2.65-3.50	2.10-3.55	1.80-4.00	
Sensitivity Time 2					
M	3.08	2.91	3.21	3.55	2.80*
SD	.60	.34	.53	.35	high > none, limited
Range	1.85-4.00	2.30-3.40	2.50-3.90	2.80-4.00	
Harshness Time 1					
M	1.51	1.31	1.36	1.11	1.90
SD	.60	.23	.32	.24	
Range	1.00-2.96	1.00-1.67	1.00-1.89	1.00-1.78	
Harshness Time 2					
M	1.44	1.50	1.55	1.61	1.40
SD	.56	.19	.54	.16	
Range	1.00-3.11	1.22-1.78	1.11-2.44	1.00-1.39	
Detachment Time 1					
M	1.53	1.41	1.47	1.40	.27
SD	.59	.35	.46	.33	
Range	1.00-3.25	1.00-2.13	1.00-2.25	1.00-2.00	
Detachment Time 2					
M	1.75	1.61	1.27	1.25	3.19*
SD	.63	.56	.29	.40	none > moderate, high
Range	1.00-3.75	1.00-2.75	1.00-1.75	1.00-2.00	
Observed Ratio Time 1					
M	.18	.15	.18	.22	2.62
SD	.06	.04	.05	.07	
Range	.09-.35	.10-.23	.13-.27	.12-.33	
Observed Ratio Time 2					
M	.19	.16	.18	.24	2.20
SD	.07	.09	.04	.08	
Range	.10-.38	.09-.40	.13-.25	.14-.42	

Note: Early Childhood Environment Rating Scale (ECERS) scores greater than 5 indicate good or developmentally appropriate classroom quality; scores below 5, but greater than 3, indicate mediocre quality. For detachment, harshness and sensitivity, a score of 1 indicates that a behavior was uncommon for a teacher; a score of 4 indicates that the behavior was characteristic of a teacher. For ratios, lower percentages indicate more children cared for by each adult.

[a] $n = 26$. [b] $n = 9$. [c] $n = 10$. [d] $n = 10$.

*$p < .05$.

Table 8 Comparison of Working Conditions and Benefits in Centers Seeking Accreditation with Different Intensity of Support

	None[a]	Limited[b]	Moderate[c]	High[d]	F
Working Condition	Percent of Centers Offering to				
Teachers Time 1					
Grievance procedure	96	67	80	100	8.07* Limited < none, high
Paid breaks	100	78	100	96	10.61* Limited < all
Paid offsite training	81	11	100	80	20.08*** Limited < all
Assistants Time 1					
Paid breaks	91	67	100	100	13.27** Limited < all
Paid offsite training	78	17	100	78	14.35** Limited < all
Teachers Time 2					
Paid offsite training	66	33	80	20	9.87* Limited, high < moderate, none
Assistants Time 2					
Paid breaks	96	33	100	100	8.83* Limited < all others
Teachers Time 1					
Paid sick days	96	67	100	100	15.88,** limited < all
Paid vacation days	89	56	100	80	9.13,* limited < none, moderate
Assistants Time 1					
No dental insurance	35	50	13	78	2.91*, limited, high < moderate
Paid sick days	73	33	80	80	9.26,* limited < all

Note: Among centers participating in support projects, assistance ranged from limited intensity (periodic meetings for directors) to high intensity (staff person assigned to provide technical assistance, regular director meetings and staff training).

[a] $n = 26$. [b] $n = 9$. [c] $n = 10$. [d] $n = 10$.

*$p < .05$. **$p < .001$.

APPENDIX B

Measures

Child Care Director Interview requests information about:

- center characteristics, e.g., legal status, fees, number and background of children served, amounts and types of subsidies;
- staff and job characteristics, e.g., information about ethnicity, age, experience, educational background, ongoing training, salaries, working conditions and benefits for each teaching and administrative staff member;
- staff stability, e.g., turnover rates for center as a whole, and tenure for each member of the staff;
- director job assessment, e.g., satisfaction with career opportunities, professional preparation, and identified training needs; and
- NAEYC accreditation, e.g., familiarity with NAEYC accreditation, and if appropriate, expectations for participation in the self-study process at Time 1; attitudes toward the self-study process, the support group, and progress toward accreditation as appropriate at Time 2.

Support Group Coordinator Interview includes questions about:

- history and scope of the project, e.g., source and level of funding, project goals, and services provided;
- project participants, e.g., number of programs, recruitment and selection of centers, characteristics of centers; and
- NAEYC accreditation, e.g., assessment of self-study process, obstacles encountered, and impact of accreditation process on quality.

Child Care Teaching Staff Interview requests information about:

- staff background, e.g., age, ethnicity, marital status, family profile, household income, additional employment, and level of formal schooling;
- professional background and affiliation, e.g., specialized early childhood training, professional memberships, tenure on the job and in the early care and education field;
- classroom characteristics, e.g., ages and number of children, linguistic profile of children, ratios of adults to children throughout the day;
- job characteristics, e.g., wages, benefits, working conditions, work hours, expenditures on supplies;
- job satisfaction and career plans, e.g., training needs, career opportunities, recommendations to improve the field, assessment of director management style; and
- NAEYC accreditation, e.g., familiarity with NAEYC accreditation, and if appropriate, expectations for participation in the self-study process at Time 1; and attitudes toward the self-study process, the support group, and progress toward accreditation as appropriate at Time 2.

Variables Tested to Identify Teachers of Different Skill Levels Who Left or Remained On The Job

Working Conditions

- Related to center polices: written contracts, salary schedules, job descriptions, grievance procedures, paid breaks, paid lunch, staff lounge.
- Involving payment for duties and wage adjustments: paid staff and parent meetings, on-side and off-site training or workshops, preparation time, compensation for overtime work, periodic merit or cost-of-living increases.

Benefits Package

- Paid sick, holiday and vacation days; pension plan or other retirement option; reduced-fee child care; and paid or unpaid maternity leave.

Personal Characteristics

- Related to demographics and family composition: age, ethnicity, number of children, marital status, household income, and whether the person held a second job (gender not included because 96% of staff were female).
- Related to professional characteristics: early childhood education and training, membership in professional organizations, and involvement in continuing education or efforts to upgrade the early childhood field; tenure in the child car field, in the center, and in current position.

Center Characteristics

- Auspices, income area, size, hours of operation.
- Relation to accreditation—achieved, sought or did not seek—and level of support for centers that sought and/or achieved accreditation.

Background Climate

- Percentage low-background staff.
- Percentage high-background staff.

Turnover Climate

- Tenure of the director.
- Percentage of high-background staff who remain on the job.
- Percentage of high-background staff who leave the job.
- Percentage of low-background staff who remain on the job.
- Percentage of low-background staff who leave the job.
- Overall turnover between Time 1 and Time 2.

APPENDIX C

Assessing Quality: A Comparison of NAEYC Accreditation Criteria and the Early Childhood Environment Rating Scale

OVERVIEW

The following discussion compares the content areas and scoring systems for the NAEYC quality criteria and the Early Childhood Environment Rating Scale (ECERS), and explores the extent to which the two measures define high-quality care in a similar fashion. While the comparison focuses on preschool environments, an infant-toddler version of the ECERS, the Infant Toddler Environment Rating Scale (ITERS), is also available, and criteria specifically geared to younger children are included in the NAEYC assessment.

THE NAEYC ACCREDITATION SELF-STUDY PROCESS

The National Academy of Early Childhood Programs is the arm of NAEYC responsible for conferring accreditation status. The Academy grants accreditation to programs that demonstrate substantial compliance with its Criteria for High Quality Early Childhood Programs (NAEYC, 1991). To establish compliance, centers engage in a multi-faceted self-assessment referred to as "self-study."

During self-study, program information is collected from various sources including:

- observations in each classroom based on the Early Childhood Classroom Observation;
- administrator reports;
- questionnaires completed by all staff; and
- questionnaires completed by parents of all children attending the center (NAEYC, 1991).

Each head teacher rates the quality of her own classroom using the Early Childhood Classroom Observation, which is estimated to take approximately one and one-half hours to complete. Directors also observe each classroom independently of the teachers. Then, directors and teachers compare their observations, identify strengths and weaknesses of the classroom, and develop a plan for needed improvements. Once improvements are made, the director and teacher agree on a rating for each classroom. Classroom scores are averaged to create a center score for all criteria.

Centers submit a Program Description to the Academy which includes the criteria ratings and other self-study materials. Following the receipt of these materials, NAEYC selects a validator to make an on-site visit to verify the Program Description's accuracy. Validators are early childhood professionals trained by the Academy who provide their services on a volunteer basis.

No inter-rater reliability is established for accreditation validators. The results of the validator observation and the self-study materials are reviewed by a panel of early childhood professionals, which makes the final decision about the accreditation status of each center.

NAEYC Criteria: Early Childhood Classroom Observation

The self-study process involves input from the center administration, staff and parents. Most of the criteria required for high-quality programs, however, can be addressed only through direct observations of classroom activities and teacher-child interactions, and are summarized in the Early Childhood Classroom Observation, the instrument used by teachers, directors and the NAEYC-appointed validator to rate a classroom.

The Early Childhood Classroom Observation organizes NAEYC's criteria around five content areas for preschool classrooms:

1. interactions among staff and children (15 items);
2. curriculum (22 items);
3. physical environment (10 items);
4. health and safety (16 items); and
5. nutrition and food service (1 item).

Each content area contains multiple criteria, followed by a list of indicators or important points that must be considered when rating each item. (Indicators, however, are not specifically weighted or counted.) Self-study item B-5d states, for example, that "Developmentally appropriate materials and equipment are available for preschoolers," and includes the following indicators to be considered:

- active play equipment for climbing and balancing;
- unit blocks and accessories;
- puzzles and manipulative toys;
- picture books, records and musical instruments;
- art materials such as finger and tempera paints, crayons, scissors and paste;
- dramatic play materials such as dolls, dress-up clothes and props, child-sized furniture and puppets; and
- sand and water toys.

NAEYC criteria are scored on a three-point scale:

- A score of 1 indicates non-compliance. There is little evidence that the criterion accurately describes the program; the given behavior rarely or seldom happens.
- A score of 2 indicates partial compliance. There is some evidence that the criterion accurately describes the program; the behavior happens some of the time.
- A score of 3 indicates full compliance. There is a great deal of evidence that the criterion accurately describes the program throughout the day; the behavior happens most of the time.

THE EARLY CHILDHOOD ENVIRONMENT RATING SCALE (ECERS)

The Early Childhood Environment Rating Scale (ECERS), the most widely-used global assessment of classroom quality (Helburn et

al., 1995), is a 37-item scale focused on the day-to-day quality of classroom environments, activities and interactions. In contrast to the NAEYC criteria, scores for the 37 ECERS items are based on a seven-point scale ranging from inadequate (1) to minimally acceptable (3) to good (5) to excellent quality (7). For each item, inadequate, minimal, good and excellent care are specifically described. Descriptors for the dramatic play item, for example, are as follows:

- Score = 1: No special provisions for dress-up.
- Score = 3: Props focus on housekeeping roles.
- Score = 5: Variety of props including transportation, work, adventure. Space for play inside and outside class.
- Score = 7: Everything in Score 5 plus pictures, stories and trips used to enrich dramatic play.

A rating of 1 is given if any part of that description applies. A rating of 2 is given if no part of 1 and part of 3 apply. A rating of 3 or 5 is given if all parts of that description are met. All parts of the description under 3 must be met before a higher score can be given. A mid-point rating of 4 or 6 is given if all of the description of the lower score (3 or 5) and part of the description of the higher score (5 or 7) are met. A rating of 7 applies when all of the description in 5 and 7 are met. Scores for each item are averaged into one composite global score.

Although teachers and directors sometimes use the ECERS as a self-assessment tool, the ECERS is completed in a research study by a trained observer during a visit of two hours or more to each classroom. Information to complete the ECERS is gathered through observation and by directly seeking out information from the teacher or director when necessary. Because the ECERS observer is not part of the center staff, she or he may not have intimate knowledge of all aspects of the program that are directly observed in a two-hour period. ECERS observers, however, must typically achieve reliability in their ratings with other trained observers before completing assessments that are to be used in research studies, and may therefore provide a relatively objective assessment of a classroom environment.

NAEYC CRITERIA AND ECERS: A COMPARISON OF CONTENT AND SCORING

NAEYC criteria for preschool classrooms include 64 items, many with multiple indicators. Of these items, 47 (73%) are addressed specifically in the ECERS. Items excluded from the ECERS focus mainly on health and safety issues, such as protective caps for electrical sockets.[1] All major categories are addressed in each instrument.

Some NAEYC criteria are addressed by multiple ECERS items. A detailed description of how similar concepts are addressed differently is included at the end of this Appendix. One-to-one correspondence does exist, however, between some items. Self-study criterion B5, for example, states that a classroom should have "multiracial, nonsexist, non-stereotyping pictures, dolls, books and materials available." To receive a "good" score on ECERS item 31, Cultural Awareness, a classroom must have a "liberal

[1] As of this writing, the ECERS is being revised to include items on health and safety.

inclusion of multiracial and nonsexist materials."

Although a clear majority of self-study criteria are addressed directly or indirectly in the ECERS, content areas are organized differently. The first section of the Early Childhood Classroom Observation, for example, focuses on interactions among staff and children. It addresses the frequency of interactions; the availability of staff to children; the style of interactions (friendly, respectful, encouraging, guiding, non-frightening); the overall atmosphere (the overall sound of the group is pleasant and children are happy); and how staff help and encourage children's socialization (e.g., helping children deal with anger and sadness, talking about feelings, staff expectations of children's social behavior, and encouragement of prosocial behavior such as sharing and cooperating).

In comparison, the ECERS addresses staff-child interactions in several ways. First, one item on the ECERS (Item 32, Tone) directly addresses staff-child relationships. This item rates the "general impression of the quality of [teacher-child] interaction," offering such suggestions as "irritable and angry" vs. "staff and children relaxed," "voices cheerful," and "frequent smiling."

Second, in contrast to NAEYC criteria, the ECERS is organized to examine staff-child interactions during particular activities, specifically addressing the quality of supervision during fine motor activities, gross motor activities and creative activities. During gross motor activities, for example, the ECERS asks, "Is supervision provided near children," is attention provided "mainly to safety of children," or does the teacher "talk to children about ideas related to play, enhance play with resources, and build social skills?"

Staff-child interactions are also embedded within other ECERS items. Item 2, for example, Meals and Snacks, includes provisions for teachers to "sit with children and provide a pleasant social environment during meals and snacks." Classrooms providing excellent care plan meal times as a learning experience, including "promoting self-help skills and talking about children's interests." Item 4, Diapering and Toileting, includes criteria for "pleasant adult-child interactions." Teacher-child interactions are therefore assessed throughout the ECERS rather than in one item.

Correspondence between ECERS and NAEYC Criteria Scores

How do ECERS scores and NAEYC criteria ratings compare? In general, full compliance with one of the NAEYC criteria corresponds to an ECERS score of 5 or greater for that particular item. Non-compliance or partial compliance corresponds to an ECERS score of less than 5, with non-compliance in some cases corresponding to less than 3 in the ECERS. NAEYC criterion Item B-4a states, for example, that "All age groups play outdoors daily, weather permitting." Full compliance means this happens regularly. This item corresponds to ECERS Item 19, Scheduled Time for Gross Motor Activities. A score of 5 on the ECERS indicates that there is "regularly scheduled physical activity time daily, both morning and afternoon." Of the 47 items addressed in both the NAEYC criteria and the ECERS, full compliance would correspond to an ECERS classroom rating score of 5 or better for 87%

of the items. In only four cases does full compliance with an NAEYC criterion correspond to an ECERS score of 7.

ADDITIONAL QUALITY ISSUES

Staff-Child Ratios

There is consensus within the early care and education community that a teacher's ability to engage children in developmentally appropriate activities can occur only if there are appropriate staff-child ratios. Too many children per teacher prevents small-group activities and attention to individual children. Although ratio regulations vary across states, NAEYC includes ratio standards as part of the accreditation process. For preschool children (ages 3 to 5) NAEYC requires a 1:7 ratio for group sizes of 14 children, up to a 1:10 ratio for group sizes of 20 children.

During self-study, directors record the staffing pattern (number of teachers and number of children during each hour of operation) for all classrooms in the center. They use this information to determine the staff-child ratio for each classroom. Directors report their center's staffing pattern, and the number of classrooms that meet NAEYC's staff-child ratio criteria, in the Program Description they submit to NAEYC. The ECERS does not include staff-child ratio requirements. Because researchers view ratios as a critical component of high-quality care, ECERS scores are often reported along with ratios.

Staff Qualifications

As part of the accreditation process, directors also report the staff qualifications of all administrators and of all staff members who work directly with children. For each person, the highest level of formal education achieved and all early childhood education and other credentials received are recorded. More specifically, NAEYC requires all staff to be 18 years of age or older, with a high school diploma or equivalent. Head teachers must have at least a CDA credential or AA in Early Childhood/Child Development or equivalent. The center administrator must have training and/or experience relevant to early childhood program administration.

In contrast, there are no requirements for staff qualifications included in the ECERS. To supplement the ECERS, researchers often collect information about staff professional background.

Adult Work Environment

The Early Childhood Classroom Observation used to report compliance with NAEYC criteria does not address the adult work environment. Two other self-study materials, however—the Open-ended Staff Survey and the Administrator's Report—include questions about whether the staff have:

- a written job description;
- salary information;
- benefits;
- resignation and termination policies;
- a grievance procedure;
- paid leave (annual, sick, personal);
- medical insurance;
- a retirement plan;
- subsidized child care;

- educational benefits;
- space to store personal things;
- a staff lounge;
- time for breaks;
- paid planning time;
- on-site resources; and
- in-service training.

These issues are also addressed in the Administrator's Report (E3a, and E4) which is submitted prior to the validation visit.

Three ECERS items deal specifically with staff needs. They include:

- Item 34, Adult Personal Area. A score of 5 indicates that an adult rest room and lounge is available, and that there is adult furniture in the lounge and central storage for teachers' belongings.
- Item 35, Opportunities for Professional Growth. A score of 5 requires a good professional library, regular staff meetings, and orientation for new staff members.
- Item 36, "Adult Meeting Area. A score of 5 indicates that the "adult group meeting area and conference space is satisfactory. Dual use (if necessary) does not make scheduling difficult."

The ECERS, however, does not address staff working conditions or benefits.

A Partial Comparison of NAEYC's Early Childhood Classroom Observation and the Early Childhood Environment Rating Scale (ECERS)*

Examples of items addressed differently.

NAEYC: Fostering Positive Self-Concept	ECERS: Building Self-Esteem and Independence
B-7. Staff provide a variety of developmentally appropriate hands-on activities for children to achieve the following goals. B7-a. Foster positive self-concept. • Allow time for children to talk about what they see, do, like. • Use children's names frequently in songs, games. • Display children's work and photos of children and their families. • Encourage children to draw pictures and tell stories about self, family and cultural practices. • Provide many opportunities for children to initiate activity, develop and demonstrate control of their bodies and self-help skills.	The ECERS does not have an item specifically designed to measure staff attempts to develop children's positive self-concept. This area is evident, however, in the following items: Item 2. Meals and snacks. One of the requirements to receive a score of 7 is that "meals must be planned as a learning experience, including talking about children's interests, events of the day, etc." Item 12. Using language lists. "Talking about experiences and child-dictated stories," as ways to develop children's expressive language skills. Item 21. Art. To receive a score of 7, there must be an "Attempt to relate art activities to other experiences." Development of self-help skills is evident in the following items: Item 2. Meals and snacks. Score = 7: "Meals must be used as a learning experience including self-help skills." Item 4. Diapering/toileting. Score of 7 requires child-sized toilets and low sinks to promote self-help. Item 5. Personal grooming. Score = 5: "Grooming routines used to develop positive self-concept." Score = 7: "Independence encouraged with proper supervision." Item 7. Furnishings and displays for learning activities; and Item 9, Room arrangement: Score = 7: "Provisions (to promote) appropriate independent use by children." Item 15. Perceptual/fine motor. Score = 7: "Materials organized to encourage self-help." Item 23. Blocks. Score = 7: "Storage organized to encourage independent use." No item in the ECERS mentions the use of children's names in songs and games.

*A detailed comparison of all Early Childhood Environment Rating Scale (ECERS) and Early Childhood Classroom Observation items is for available from the National Center for the Early Childhood Work Force.

Examples of items addressed similarly:

NAEYC: Children with Special Needs	ECERS: Exceptional Children
B. Curriculum B-3a. Modifications are made in the environment, staffing pattern, schedule and activities to meeting child's special needs. • Indoor and outdoor environments are accessible to playground access as needed. • Schedule is modified as needed, such as shorter day or alternative activities. • Program is modified as needed, such as provision of special materials and equipment, use of supportive services, individualization of activity. • Individual education plans are developed and implemented in a developmentally appropriate manner. • Therapy is developed appropriately and incorporated within classroom activities as much as possible, rather than removing the child from the classroom.	See ECERS Item 33: Provisions for exceptional children. Score = 1: "No provisions/plans made for exceptional children. Reluctance to admit children with special needs." If self-study rating = 1 (not met), ECERS score = 1. Score = 3: "Minor accommodations made to get through the day, but no long-range plans for meeting the special needs of exceptional children. No attempt to assess degree of need." Self-study rating = 2 (partially met), ECERS score = 3. Score = 5: "Staff assess needs of children and make modifications in environment, program and schedule to meet the special needs of exceptional children." Score = 7: Everything in Score 5 plus: "Individually planned program for exceptional children involving parents and using professionally trained consultant to guide assessment and planning. Referral to support services." If self-study rating = 3 (fully met), ECERS score = 5 or 7. NOTE: Some additional ECERS items address children with special needs: Item 11, Understanding language: Score = 7, includes the statement: "Plans additional activities for children with special needs."
NAEYC: Materials and Equipment	**ECERS: Materials and Equipment**
B-5d. Developmentally appropriate materials and equipment are available for preschoolers. • Active play equipment for climbing and balancing. • Unit blocks and accessories. • Art materials such a finger and tempera paints, crayons, scissors and paste.	Item 18. Gross motor equipment. • Gross motor equipment must not only be present but readily available, sturdy, and stimulate a variety of skills (e.g., crawling, walking, balancing, climbing). A score of 5 on this item also requires "building and dramatic play equipment" to be included in gross motor areas. Item 23. Blocks. This item examines the block area as well as the actual blocks and accessories. • If there are blocks and accessories enough for at least two children to play but no special block area, ECERS score = 3. Score = 5 for special block area with convenient storage; space, blocks, accessories for three or more children; area available for at least one hour mornings and afternoons. Score = 7 for special block area with suitable surface; variety of blocks and accessories with storage organized for independent use.

table continues

NAEYC: Children with Special Needs	ECERS: Exceptional Children
	Crayons and scissors are part of the materials listed for developing perceptual fine motor skills (ECERS Item 15). Other art materials are rated in Item 21. The ECERS goes beyond simply having art materials available. It also requires individual expression in art and art available for free choice to receive a rating of 5. • Score = 1: "Few materials available; mostly teacher-directed projects; not available during free choice." • Score = 3: "Some materials available, primarily drawing and painting; available for free choice; emphasis on projects that are like an example shown." • Score = 7: "Variety of materials available for free choice, including three-dimensional materials. Attempt to relate art activities to other experiences."

NAEYC: Cultural Diversity	ECERS: Cultural Awareness
B-5a. Multiracial, nonsexist, non-stereotypic pictures, dolls, books and materials are available. B-7h. Respect cultural diversity	Item 1. Cultural awareness. To receive a score of 5, cultural awareness must be evidenced by "liberal inclusion of multiracial and nonsexist materials." Score = 7 indicates that "cultural awareness in part of curriculum; planned use of both multiracial and nonsexist materials."

Note: Neither NAEYC or the ECERS specifically address linguistic sensitivity.

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GLOSSARY

Accreditation is a certification given to a child care program which meets certain standards of quality set by the accrediting organization; in the case of this study, by the National Association for the Education of Young Children (NAEYC).

Accreditation Support Project is a publicly- or privately-funded initiative designed to assist child care programs' efforts to improve their services and to become accredited.

Adult Work Environment encompasses aspects of a child care center's operation that impinge directly on the quality of the day-to-day demands and rewards of working in the center. These include staff wages, benefits, working conditions (e.g., leave policies, training opportunities), staff job satisfaction, budget resources and allocations for personnel.

Analysis of Variance is an analytic technique used to compare the means of two or more groups and to determine whether they differ significantly. Analysis of variance is used, for example, to compare turnover rates among centers seeking accreditation with different levels of intensity of support.

Assistant Teachers are persons working under the supervision of a teacher; this term also includes teacher aides.

Auspices refers to the legal status and ownership of a center; in this study, two types of center auspices—for-profit and nonprofit status—are compared.

Background is used in this study to describe the formal education and specialized training in early childhood education or child development of teaching staff and directors. In this study, "low background" teachers have 24 or fewer units of college-level early childhood education training. "High background" teachers have completed a four year college degree in early childhood education or a related field.

Background Climate is a variable which refers to the percentage of teaching staff with high or low background levels that are employed in a center.

Chi-square (χ^2) is an analytic technique used to indicate whether there is a significant relationship between two variables (e.g., level of education and staff position) based on their frequency.

Child Care Center, for purposes of this study, is a licensed facility in which care is provided to at least 15 young children, generally for up to 12 hours per day, five days per week, year-round.

Child Care Resource and Referral Agencies are local organizations whose purpose is to direct parents to available child care centers and family child care homes; they may also coordinate training opportunities, promote public awareness of child care issues; and assist in the licensing and/or accreditation of child care settings.

Correlation is a statistical measure of the association between two variables. Correlation coefficients range from +1.00 (a perfect positive association; e.g., a high score on variable A corresponds to a high score on variable B) through zero (the absence of any association) to -1.00 (a perfect negative association; e.g., a high score on variable A corresponds to a low score on variable B).

Developmentally Appropriate Caregiving is a factor subscale from the *Early Childhood Environment Rating Scale* that captures the quality of staff-child interaction, supervision, child discipline, and other aspects of care that are a function of the nature of caregiving provided to children.

Discriminant Function Analysis is an analytic technique used to predict group membership from a set of predictors. For example, it can be used to predict whether highly-skilled teachers will stay at or leave their jobs based on their working conditions, wages, educational backgrounds or other variables.

Early Childhood Classroom Observation, developed by NAEYC's National Academy of Early Childhood Programs, is a comprehensive list of activities, equipment and interactions used by teachers, directors and the NAEYC-appointed validator to rate a classroom in a child care center (NAEYC, 1991).

Early Childhood Environment Rating Scale (ECERS), the most widely used global assessment of child care classroom quality, is a 37-item scale focusing on the day-to-day quality of classroom environments, activities and interactions (Harms and Clifford, 1980).

Group Size is the total number of children assigned to a member or team of members of a teaching staff, and grouped in an individual classroom or well-defined physical space within a child care center.

Home-based Child Care refers to child care provided by a person in her home, usually for her own and other parents' children; also known as "family child care."

Inter-rater Reliability is the degree to which two independent observers or raters provide the same results when assessing, for example, the same child or classroom with the same measure. Reliability coefficients range from 0.00 to 1.00, with 1.00 indicating perfect agreement among raters.

Licensing is the process by which a state reviews the practices of a child care program and finds that they meet state-defined standards of operation.

Logistic Regression is an analytic technique that allows one to predict a discrete outcome, such as an ECERS score greater than 5, from a set of variables, such as intensity of support group services.

Mean (M) is the average score for a sample on a particular variable, which is calculated by taking the sum of all scores divided by the sample size.

Median is the score in a distribution of scores which divides the distribution in half, with 50 percent of the scores above the median and 50 percent of the scores below the median.

Multiple Regression Technique is a statistical technique that allows one to determine the predictive value of several variables on an outcome variable; for example, whether child care quality can be predicted by accreditation status, teacher background, or staff turnover.

National Academy of Early Childhood Programs is the arm of the National Association for the Education of Young Children (NAEYC) which is responsible for conferring accreditation status on child care programs.

Positive Staffing is a composite variable which captures turnover and stability based on teacher background or performance. It is comprised of four categories in this study, listed from least to most desirable: highly-skilled or educated staff who left their jobs between Time 1 and Time 2; minimally-skilled or educated staff who remained; minimally-skilled or educated staff who left; and highly-skilled or educated staff who remained.

Publicly-Operated Child Care Center is a center that is operated by a local, state or federal government entity.

Publicly-Funded Child Care Center is a center that receives funds from a local, state or federal government, contingent on following established local, state or federal guidelines.

Quality is a term used to describe the type of care provided to children in child care. Child care quality can range from poor or inadequate to excellent. Sometimes the terms "quality" and "high (or good) quality" are used interchangeably. Factors that affect quality can include but are not limited to the classroom environment and activities, teacher-child interactions, and the adult work environment.

Random Sampling is a strategy for selecting subjects for inclusion in a study, in such a way as to ensure that all potential subjects have an equal chance of participating. This study, for example, used random sampling to select teachers for observation, to ensure that all teachers would have the same probability of being selected and that the sample would be representative of the teacher population in the participating centers.

Replacement Sampling is a sampling strategy in which a specified proportion or number of subjects (e.g., centers pursuing accreditation) with specific characteristics is sought. For any subject who refuses to participate in a study, a replacement subject with the same characteristics is sampled.

Self-Study is the process by which a child care program undergoes a quality assessment in order to meet standards of accreditation set by NAEYC.

Significance Level (p) summarizes a test performed to determine whether results (e.g., differences between two groups) are due to non-chance factors. Significance level (p) is a probability so rare that results are not due to chance. Common significance levels are .05, .01 and .0001. For example, a significant level of $p=.05$ indicates that results would occur five percent of the time or less by chance. Therefore, a smaller probability level (e.g., $p=.01$ or $p=.001$) indicates stronger reults and less likelihood that the event occurred by chance.

Stability is used to characterize the tenure and turnover of teaching staff in a child care center. Centers with high turnover and staff who have not worked at the program for a

long period have low staff stability. Centers with low turnover and staff who have worked at the program for a considerable amount of time have high staff stability.

Staff-child Ratio (or Adult-child Ratio, or Teacher-child Ratio) is the proportion of the number of teaching and caregiving adults to the number of children in a specified classroom.

Staff Tenure is the length of time a staff member of a child care program has worked at the particular program.

Standard Deviation (SD) is the measure of the variability of a particular variable for a given sample.

Stratified Random Sampling is a strategy in which a sampling unit (e.g., centers in the community) is divided into smaller units (e.g., centers serving different income groups), from which individual subjects are sampled on a random basis. In this example, "income" is the stratifying variable; centers were then sampled according to income groups served, in proportion to their total distribution in the community. (See also Random Sampling.)

T-test is an analytic technique for assessing whether significant differences exist between the means of two groups (e.g., quality ratings for accredited and non-accredited centers).

Teachers are persons in charge of a group or classroom of children, often with staff supervisory responsibilities. This category includes "head" or "lead" teachers.

Teacher-Directors are persons with both teaching and administrative responsibilities.

Teaching Staff includes all staff persons who provide direct care to children, including teacher-directors, teachers, assistant teachers and aides.

Turnover is the percentage of staff who cease their employment within a twelve-month or other specified period; calculated by taking the number of staff that have left and dividing it by the number of staff on the payroll.

Turnover Climate generally refers to the overall turnover rate of staff in a center; it can also be based on the percentage of teachers in each positive staffing category. Whether the director has remained at the center is also part of turnover climate.

Work-site Child Care is a child care program housed in an employer's facility, and its services are generally available to employees of that employer.

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